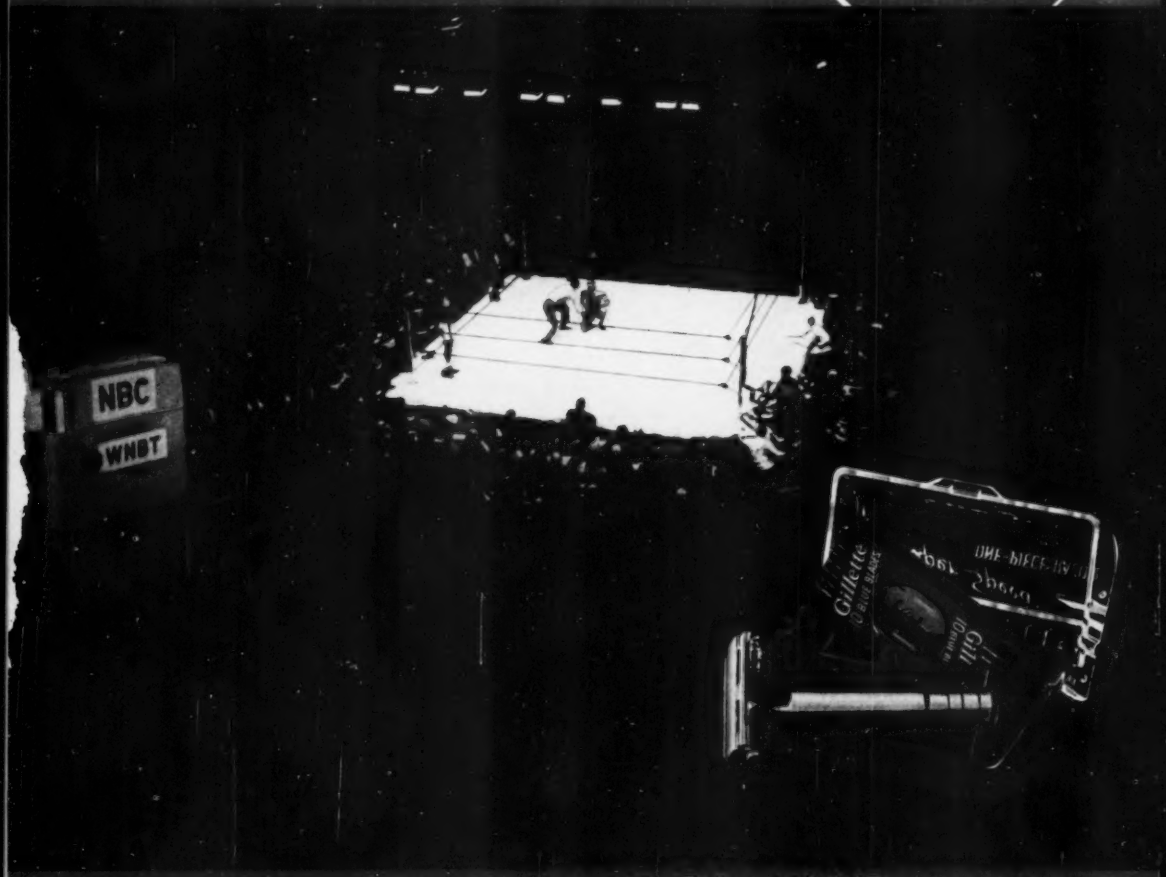
Modern packaging



Nominated for *Packaging's Hall of Fame*. Story on Page 92

May 1951

● *"you name it... I helped make it!"*

Glue that defies the elements

I've got to know the answers. About glue! Especially for overseas shipments. Waterproof adhesives must be immune to the extremes of warm rain, icy refrigeration. Moisture-resistant glues must withstand sweating tropical humidity, dampness. And on the production line? Fast-acting adhesives must keep pace with high-speed packaging that's so vital to increased output and decreased cost.

. . . and that's only a glimpse!

● *"you name it . . . I helped make it!"* Think of all our defense preparations. Medical supplies where non-toxic, chemical-resistant adhesives must meet rigid drug and pharmaceutical codes. Bomb rings. G. I. Joe's shoes. Field rations. Guns, planes, tanks. All require adhesives. The NATIONAL touch is everywhere. Glue applied through imaginative research and service. To every item of defense.

STARCHES **National** ADHESIVES

NATIONAL STARCH PRODUCTS INC.

Executive Offices: 270 Madison Ave., New York 16, N. Y. • ***Plants:*** Dunellen, N. J., Chicago, Indianapolis, San Francisco. • ***Sales Offices:*** All principal cities. • ***Canada:*** Toronto and Montreal. • ***England:*** Slough. • ***Holland:*** Veendam.

PROTECT CRITICAL SHIPMENTS!

PALLETIZE with LOAD-LOK

LOAD-LOK, a liquid dextrine adhesive, prevents freight damage in transit. Especially to fragile shipments moved by truck or rail. It provides the "palletized protection" so vital nowadays when military requirements . . . Government Specifications . . . "DO'S" demand the swift delivery of freight in perfect shape. With LOAD-LOK, palletized shipments exhibit amazing resistance to side sway . . . vertical oscillation . . . shocks. And pilferage is cut to a minimum!

LOAD-LOK is a time and labor saver too. One man can load or unload an entire freight car in an hour's time. With less than a dollar's worth of glue! No special skills necessary. No complicated equipment required. Dunnage and bracing is cut to a minimum. Damage claims are practically eliminated. In many cases the structural strength of glued loads has made it possible to replace wooden boxes with paperboard containers.

LOAD-LOK is equally applicable to paper multi-wall sacks and corrugated containers. (V, VS or W board). Originally developed to speed overseas shipments during World War II, LOAD-LOK can be readily adapted to almost any materials handling system!

For further information on how to apply LOAD-LOK to your operations, write for the National palletizing booklet. Latest palletizing techniques illustrated. Full information on permanent and portable adhesive applicators. NATIONAL ADHESIVES, 270 Madison Ave., New York 16, N. Y.

SALES ARE UP!

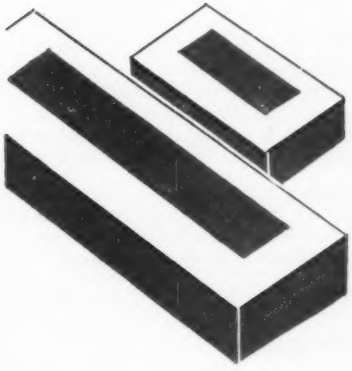
thanks to GAIR

MULTICOLOR CARTONS

GAIR multicolor cartons are winning enthusiastic acclaim everywhere with dealers, consumers and manufacturers.

These smartly designed multicolor cartons are solving packaging problems for many manufacturers who are as meticulous about their packaging as they are about their famous products.

Sales, profits and prestige are increased with the SELL-ON-SIGHT appeal of GAIR multicolor cartons.



WRITE TODAY for samples and technical information

ROBERT GAIR COMPANY, INC., 15[illegible] EAST 44th STREET, NEW YORK • TORONTO

PAPERBOARD • FOLDING CARTONS • SHIPPING CONTAINERS

Modern packaging

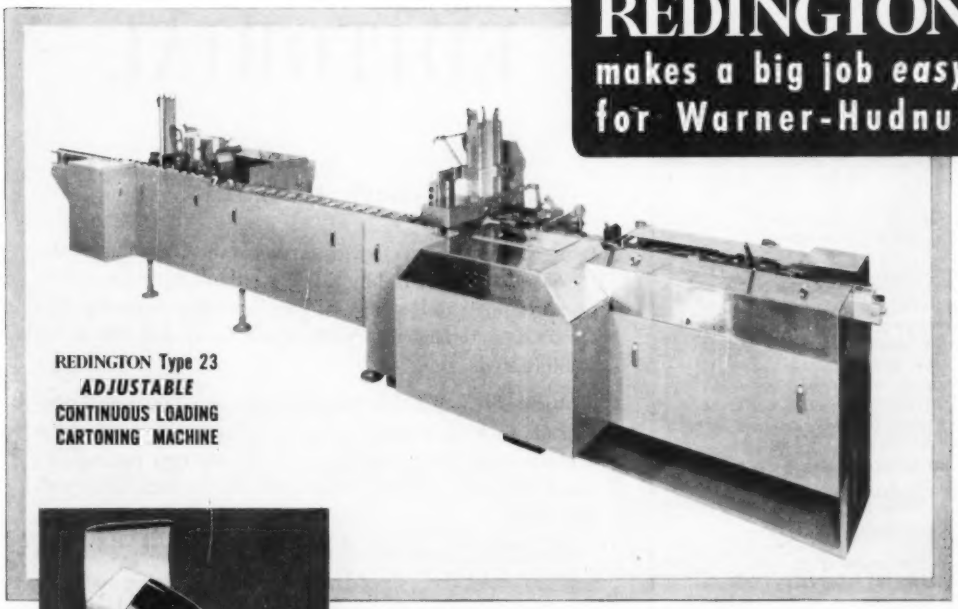
Vol. 24 No. 9 May 1951

General

Technical

Departments

REDINGTON
makes a big job *easy* for Warner-Hudnut



REDINGTON Type 23
ADJUSTABLE
CONTINUOUS LOADING
CARTONING MACHINE

★ Does a REDINGTON belong in your picture?

Whether your problem is simple or complex, routine or unique, large or small (and whatever you may carton, from codfish to razor blades) our skilled engineers will be glad to give practical advice.

HIGH SPEED PRODUCTION

flows steadily from the REDINGTON installation developed for Warner-Hudnut, Inc. A complex assembly—4-ounce bottle of Richard Hudnut Home Permanent Refill, packet of end-papers, instruction circular, booklet, foil packet of Neutralizer—is handled fast and accurately up to 120 per minute. Here is what the ingenious REDINGTON multiple-magazine and twin conveyor set-up does:

Packets of end-papers are fed from the 1st magazine and automatically positioned in each pocket of the article conveyor. Next, booklets are fed from a 2nd magazine, folded lengthwise, then placed on top of the end-papers. From the 3rd magazine a flat circular is delivered, folded twice, and placed with end-papers and booklets.

At this point the REDINGTON transfers bottles from the intake belt to the article conveyor, laying down one in each of the pockets atop the insert group. An operator then places a foil packet of Neutralizer alongside the bottle in each article pocket.

Next, a flat-stacked carton is fed from the 4th magazine, expanded, and the entire assembly — bottle, end-papers, circular, booklet, and foil packet — inserted. The final step is automatic tucking-in of the end flaps, the bottom tuck-in being spot glued.

Figure for yourself labor and overhead costs for such a complex packaging job without the fast automatic handling Warner-Hudnut gets with their REDINGTON. Consider the years of satisfactory, trouble-free service assured with all REDINGTON machines by such features as *Self-Aligning Roller Bearings, Ground* and *Polished Shafting, One-Piece Cast Iron Frame, Variable Speed Control* and others. And remember that high-speed REDINGTONS are efficiently and automatically cartoning an extreme variety of products and packages, of all kinds and sizes, in plants throughout the country.

F.B. REDINGTON CO. *~since 1897~*

AUTOMATIC MACHINES for CARTONING WRAPPING SPECIAL PACKAGING

110-112 S. Sangamon Street, Chicago 7, Illinois

Modern packaging

EDITORIAL

Back to CMP

THE ANNOUNCEMENT OF THE RETURN of the Controlled Materials Plan, effective July 1, will, we think, be welcomed by packaging-materials users and suppliers alike—provided that the order is intelligently written and fairly and effectively administered.

Much as we all dislike the necessity for Government controls of any kind, something is needed to bring us out of the wilderness of DO ratings in which we are now entangled—and it will be remembered that CMP did the trick fairly well last time.

We still feel that, with the size of the military program as now projected, there should be enough of packaging materials and facilities to handle armament without serious disruption of civilian supplies—provided that materials are equitably distributed on the basis of actual need and not for excessive stock piling.

That there may be "enough," however, does not imply business as usual; there cannot be, for some time to come, a free choice of materials or styles. As the Department of Commerce points out in the Spring issue of its *Containers and Packaging* quarterly, it will be necessary for both manufacturers and users of packaging, for the defense program as well as for themselves, to push standardization and simplification of product lines and adopt container re-use wherever possible.

Says the Department, in referring to the inauguration of CMP, "because containers and packaging are basically necessary and fundamental to the operation of the economy, container manufacturers undoubtedly will be provided with the necessary materials to fulfill essential packaging requirements."

It must be remembered, however, that this prospect can be realized only if packaging users support the standardization and simplification program and do all they can to help themselves.

The Editors

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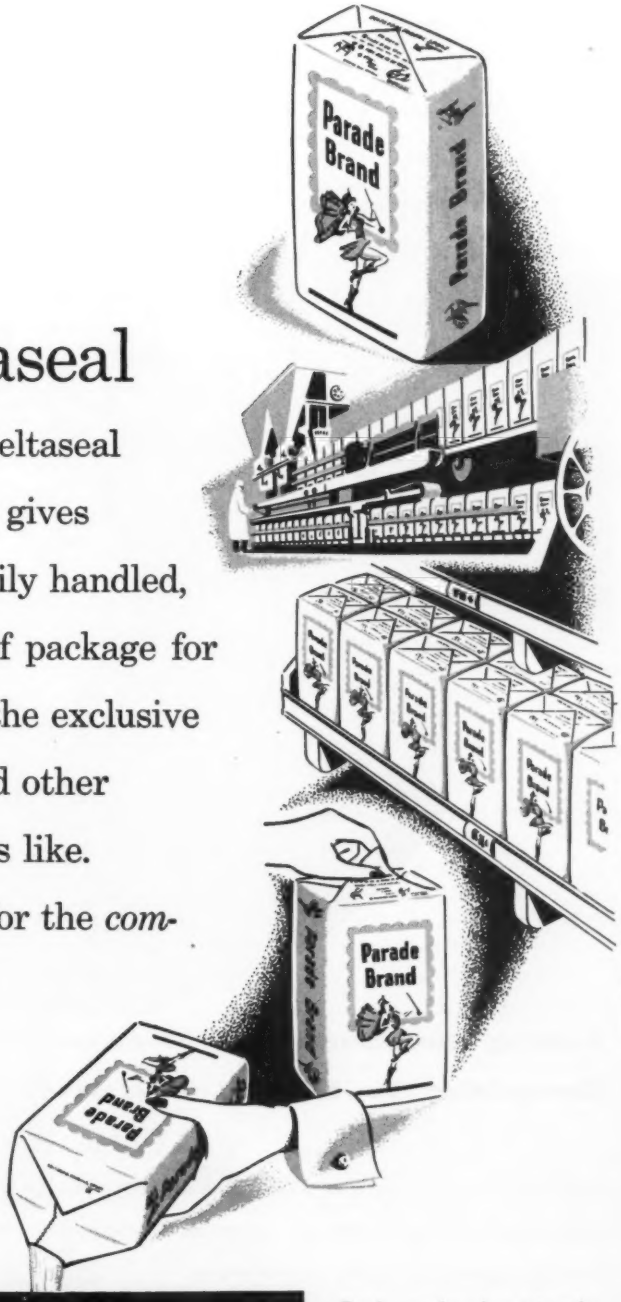
MODERN PACKAGING is regularly indexed in the *Industrial Arts Index*.

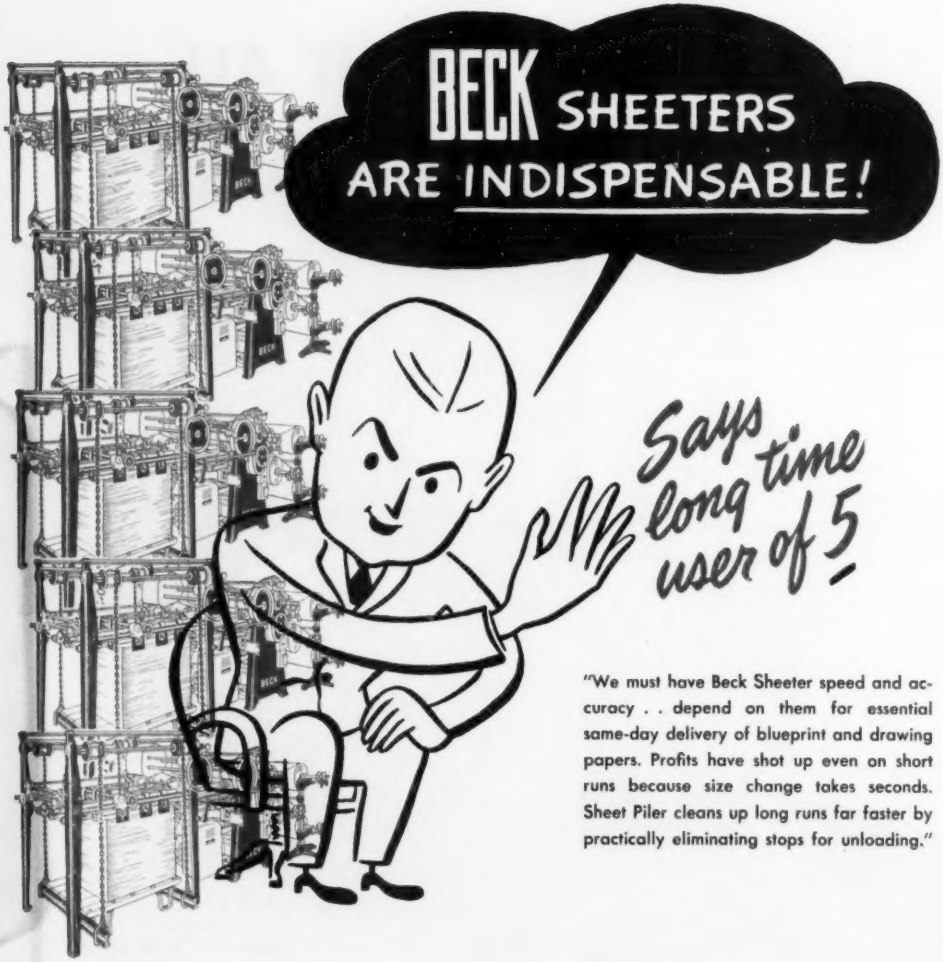
Bemis Deltaseal

(Deltaseal Bags plus Deltaseal Packaging Equipment) gives you an economical, easily handled, brilliantly printed shelf package for your product . . . with the exclusive pull-cut-pour spout and other features that customers like. Ask your Bemis Man for the *complete* Deltaseal story.



Bemis BEMIS BRO BAG COMPANY

Bemis—an American enterprise in business since 1858 . . . employing 10,000 men and women in 45 plants, mills and sales offices . . . in 28 states, coast to coast.



"We must have Beck Sheeter speed and accuracy . . depend on them for essential same-day delivery of blueprint and drawing papers. Profits have shot up even on short runs because size change takes seconds. Sheet Piler cleans up long runs far faster by practically eliminating stops for unloading."

This is only 1 case . . . but BECK can snap up your production to the peak so vital today. From cellophane to Kraft board . . . make it a fast, money-saving step from rolls to sheets with a BECK AUTOMATIC ROLL SHEET CUTTER. BECK SHEETERS are rugged, accurate for cutting *anything* from rolls . . . and cutting costs right down, too. Your wind-up for a big production pitch . . . a SHEETER Catalog. Write for yours.

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From mail desk to shipping platform every order for Republic Aluminum Foil is constantly in capable hands — hands guided by minds that recognize every individual's responsibility of filling orders accurately and quickly with a product of flawless quality.

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INCORPORATED

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DANBURY CONNECTICUT

You've put your finger

There is a reason, of course, why the makers of so many of America's leading products think instinctively of Gardner when they think of quality paperboard and folding cartons.

The reason is stamped on the bottom of Gardner folding cartons.

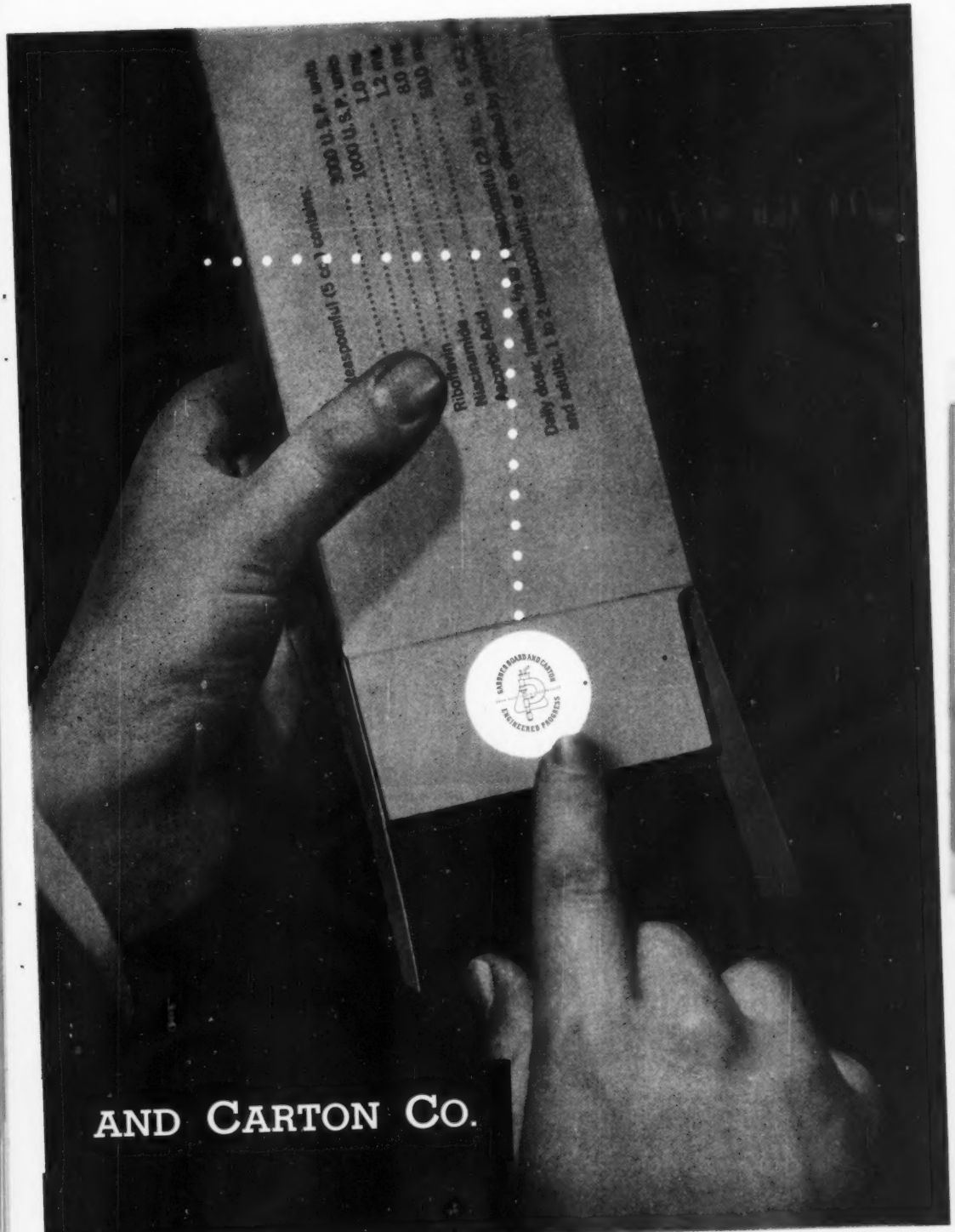
It is two words: ***"Engineered Progress."***

And they mean just what they suggest: that the progress in precision methods, the refinements that have been achieved in Gardner craftsmanship have not just happened. They were *engineered* through careful research, deliberate plan and a determination to do a better and better job.

Engineered Progress is a continuing project, here at Gardner. That's why you can be sure Gardner paperboard and folding cartons will continue to merit your increasing respect . . . perform better and better in your printing presses and in your filling machines.

THE GARDNER BOARD

Manufacturers of Folding Cartons and Boxboard, 408 Charles Street, Middletown, Ohio
Sales Offices in Boston, Chicago, Cleveland, New York, Philadelphia, Pittsburgh, St. Louis


AND CARTON CO.

This Label Tells You It's a Fine Fabric

SMOKING COMPARTMENT, MERCHANTS LIMITED, THE NEW HAVEN RAILROAD

And This Tells You It's a Fine Paper...

McLAURIN-JONES

The superior qualities of McLaurin-Jones printing, packaging and specialty papers are deep-rooted in generations of proud skill. Precision-engineered and endowed with thoroughbred performance, these famous papers enjoy the highest confidence of the printing and packaging industries.

Among the wide range of McLaurin-Jones papers, famed for their excellence, are: ***Waretone,*** mirror-finish coated paper for printing, label, box covering, cover and postcard work. ***Guaranteed Flat Gummed Papers*** for labels, seals and stickers. ***Old Tavern Gold and Silver Metallics*** for labels, box work and printed pieces. ***Relyon Reproduction Paper*** for the printing trade. A full line of ***Sealing Tapes, Stays,*** and ***Gummed Cambrics*** for boxes, cartons, and containers.

LET US HELP YOU WITH YOUR PROBLEMS ON SPECIAL COATINGS AND GUMMINGS – TECHNICAL, INDUSTRIAL, SPECIFICATION AND CHART PAPERS

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Consumer Acceptance

It's never too early to start building consumer acceptance.

When you pack your products in H-A glass food containers it's easy for young or old to select, store and remember your brand.

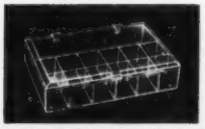
Protect and sell in H-A jars.

HAZEL-ATLAS GLASS CO. *WHEELING, W. VA.*

BURNDY Finds A PLACE FOR EVERYTHING In This **TRI-STATE** Rigid Plastic Box

A busy fellow is the automobile mechanic. He can't waste valuable time searching for the right connectors, insulation sleeves and tools when called upon to repair automobile ignition systems.

The Burndy Engineering Company, Inc., a leading manufacturer of solderless electrical connectors, sought to solve this mechanics' muddle. With the cooperation of our engineers, they created the "Burndy Connector Kit", with all parts housed in a sturdy, crystal-clear, Tri-State rigid plastic container. Fixed compartments keep connectors where they belong, and the repair man can quickly locate the parts and tools he needs with no fuss, no muss, no cuss!



Our stock box No. 650 (6-1/2" x 9-3/4" x 2") houses the "Burndy Connector Kit"... Whether you package engine parts, tobacco, confections, dairy products, food—class or mass items of any kind—there's a Tri-State Rigid Plastic Box to fit your product, build your sales, simplify packaging operations. If we cannot fill your needs from our wide variety of stock sizes and shapes, we'll mold to your specifications.

The Best Rigid Plastic Boxes are Injection Molded by

TRI-STATE PLASTIC MOLDING COMPANY

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BALANCE

● Is The Key To Outstanding Wax Performance!

Sealing Strength, Hardness, Gloss, Blocking Resistance—These are the qualities you demand of paper coated with unmodified paraffin wax. **ONLY WITH A PROPER BALANCE OF SPECIFICATIONS** can you obtain these qualities! **SPECIFICATION BALANCE** of each ingredient is also necessary in Polythene—Microcrystalline—Paraffin mixtures for the New Mirror Gloss Coatings. Best all-around performance demands it!

MOORE & MUNGER SPECIFICATIONS
Mean Perfection in
Paraffin Wax
Microcrystalline Wax
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* **Mamspec**

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*TRADE MARK

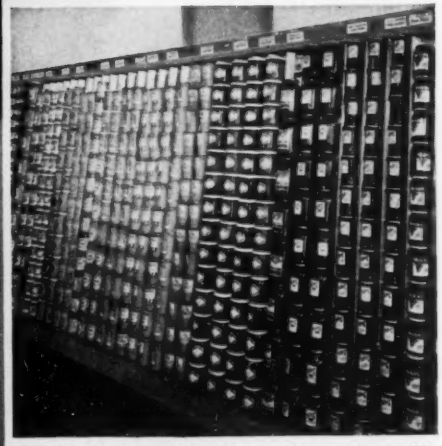

The Handiest
Bottle Ever Made!
Manufactured Under Pat. No. 2,515,093
Other Patents Pending
ELMER E. MILLS CORPORATION'S
Polyethylene
Plastic Bottle
This is *the* bottle with consumer appeals so strong they actually help sell your product!
It's unbreakable—a powerful consumer selling point on safety and thriftiness.
It's lightweight—takes up less space (and incidentally cuts your shipping cost).
It's a "squeeze bottle"—can be readily adapted to use as a stream—as a spray—as a sprinkler finish.
Our stock bottle is available in 1—2—4—8 ounce sizes. Through a special printing process we can print your label or design right on the bottle.
In addition to the production of this stock bottle and stock closure, we also custom make other thermoplastic bottles, closures and atomizers. You can depend upon their being made with the same high standards of craftsmanship which keynote all Mills plastic products.
For more information on our custom molding service, or for a free sample bottle, write us or our sales agent today.
ELMER E. MILLS CORPORATION
2930 N. Ashland Ave., Chicago 13, Illinois
Sales Agent: W. BRAUN & COMPANY
Chicago, 300 N. Canal St. New York, 595 Fifth Ave.

"We carry all available food items in GLASS"

says L. B. Smith, Jr.
Sales Manager, Thorofare Markets, Inc.
Pittsburgh, Pennsylvania

"We have recognized the importance of product visibility from the inception of the glass pack. Today we carry all available food items in glass, and they sell very well.

"Carrying perfect visibility to its ultimate in salability, we have designed, installed and made available for national distribution a 100% visual type of UPRITE SHELVING which makes glass items a thing of beauty to behold."



The ability of UPRITE SHELVING to combine maximum cubic content with perpetual label display down to the last package is an outstanding characteristic of this selling display fixture.

The only visual package for processed* foods is GLASS!

Place glass and tin packs of your brand side by side, and impulse sales will *automatically* go up!

Proof of this was established by careful market tests in the American Stores of Philadelphia. There, the new technique of putting the same products in glass and tin side by side in the same space previously used for tin alone paid off, *in every instance*, by increased TOTAL SALES.

Dealers welcome this new combination because it boosts their total sales without using extra shelf space and without increasing their total stocks except as necessary to provide for the increased sales.

*Heat-sterilized in container

Duraglas TRADE MARK REG. U.S. PAT. OFF. **CONTAINERS SELL FOOD BY SIGHT**

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

Mass display of glassed foods wakes up that buying impulse in customers. UPRITE SHELVING holds the products in place in this mass display.

The natural appetite appeal of good foods in glass does a quick selling job on customers. The convenience of the glass jar in use keeps them sold.

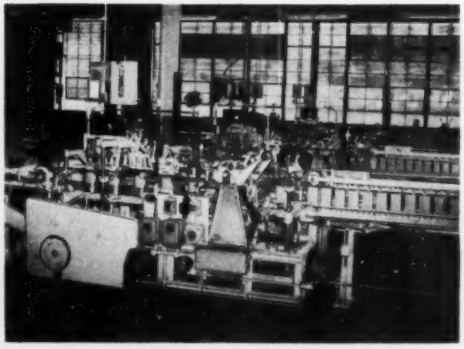
THE quick rise to popularity of prepared baking mixes called for fast action on the part of the producers. Varying densities and shortening content of mixes presented new problems in packaging.

Almost to a man the leading producers in that field met the crisis in the same way. They met it with Pneumatic equipment.

DUFF'S, for example, found Pneumatic machines to be ideally suited for their exacting "mix" packaging requirements — Double Package Maker units to produce a protective greaseproof carton, Cone Feed Weighers made for the job of feeding the different material smoothly and accurately into the container, and machines for top closing the lining and carton. DUFF'S went further — they installed Pneumatic tight wrapping machines for the application of outer labels to the entire package surface, for additional protection.

You, too, will find greater efficiency with Pneumatic machines — engineered to operate at "lower cost per container."

PNEUMATIC SCALE CORP., LTD., 82 Newport Avenue, Quincy 71, Mass. *Also: New York; Chicago; San Francisco; Los Angeles; Seattle; Leeds, England.*



Battery view of Pneumatic Top Closure Machines in operation at Duff's Baking Mix Division of American Home Foods, Inc., located at Hamilton, Ohio.

PNEUMATIC PACKAGING AND BOTTLING MACHINERY

molded from KOPPERS POLYSTYRENE

Cutlery tray molded from clear Koppers Polystyrene 31. Insert from white opaque Polystyrene. The smaller steak knife tray and insert both from ivory Polystyrene 31. Manufacturer: Stanley Home Products, Inc., Easthampton, Mass. Molders: St. Clair Plastics, Watervliet, N. Y., and F. J. Kirk Molding Company, Clinton, Mass.

ATTRACTIVE packaging is a must for merchandise sold through Stanley Home Products "party" plan. And these reusable cutlery trays have that necessary eye-appeal — they're molded from Koppers Polystyrene.

Koppers Polystyrene 31—in opaque white, clear and ivory—adds more than just beauty to these trays. Its excellent molding characteristics mean fast, free flow for large areas and thin sections. And the light weight of Koppers Polystyrene means more pieces per pound . . . results in lower unit cost.

Defense measures have limited supplies of Koppers Polystyrene and have made allocation measures necessary. During this time, we want to work with you to obtain the best results from your use of Polystyrene . . . to help solve your particular molding problems (with special attention to military end uses) . . . to design new products to be made from Koppers Polystyrene when the supply situation again becomes more normal.

KOPPERS

Koppers Plastics

Koppers Polystyrene has made Many Products Better and Many Better Products Possible.

KOPPERS COMPANY, INC., Chemical Division, PITTSBURGH 19, PA.

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"Party Dress"

FOR STEAK KNIVES

molded from KOPPERS POLYSTYRENE

Cutlery tray molded from clear Koppers Polystyrene 31. Insert from white opaque Polystyrene. The smaller steak knife tray and insert both from ivory Polystyrene 31. Manufacturer: Stanley Home Products, Inc., Easthampton, Mass. Molders: St. Clair Plastics, Watervliet, N. Y., and F. J. Kirk Molding Company, Clinton, Mass.

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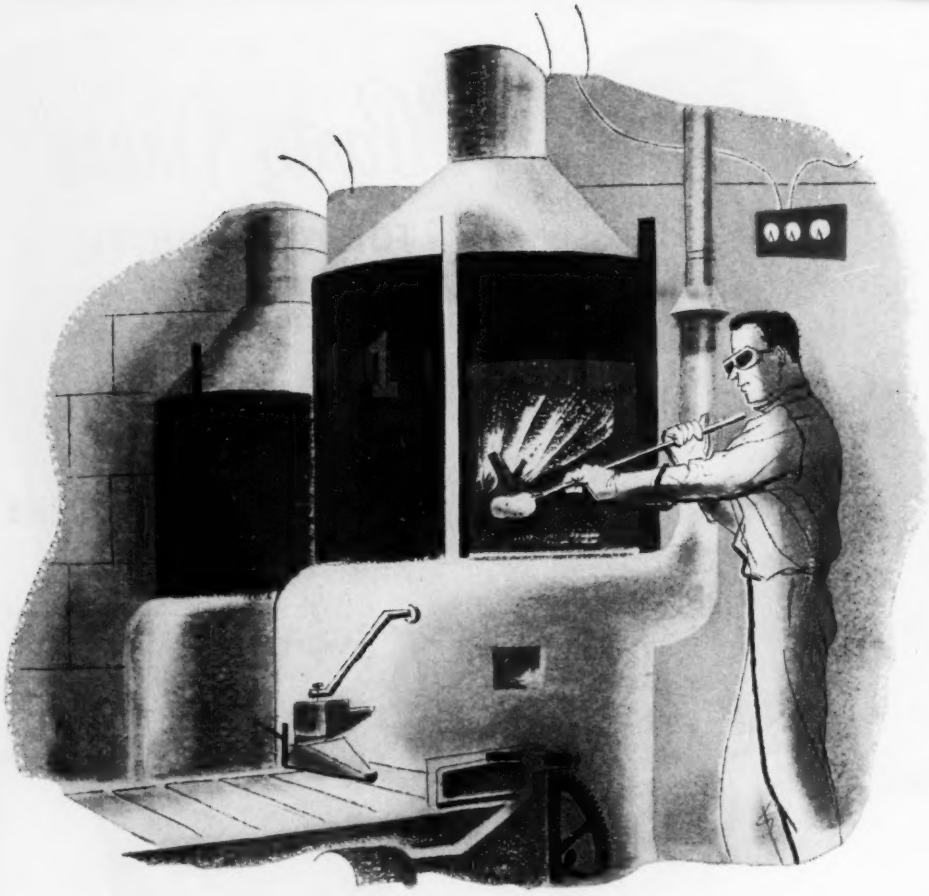
KOPPERS

Koppers Plastics

Koppers Polystyrene has made Many Products Better and Many Better Products Possible.

KOPPERS COMPANY, INC., Chemical Division, PITTSBURGH 19, PA.

SALES OFFICES: NEW YORK · BOSTON · PHILADELPHIA · CHICAGO · DETROIT · LOS ANGELES



HOT POTATO

To solve customers' packaging problems so they *stay* solved, Sun Tube relies on precision engineering, *plus* those human skills that only many years on the job can develop.

Into this cauldron of molten metal, raw material for thousands of Sun Tubes, this workman plunges an ordinary potato (or a block of birch) at a carefully judged moment. The moisture in it boils violently, agitates the metal, floats loose the last remaining slag —impurities that could cause pinholes in finished tubes if not removed.

The extra care we take at this and every step in tubemaking stems from Sun Tube's long experience in holding to *quality* standards . . . to give customers tubes that fill at lowest cost, protect the product, and add maximum sales appeal.

Sun Tube Corporation

181 Long Avenue, Hillside 5, New Jersey

Chicago 26, Ill. . . . . *James L. Coffield, Jr., 7720 N. Sheridan Rd.*
St. Louis 1, Mo. . . . . . *M. P. Yates, Arcade Building*
Cincinnati 8, Ohio . . . . . *Ralph H. Auch, 3449 Custer Road*
Seattle 4, Wash. . . . . . *King & Anderson, 1016 First Ave. South*
San Francisco 3, Calif. . . . *King & Anderson, Western Merchandise Mart, 1355 Market Street*
Portland 13, Ore. . . . *King & Anderson, 4439 N. E. Killingsworth Ave.*
New Orleans 19, La. . . . *R. P. Anderson Co., 925 No. Solomon Place*
Houston 6, Tex. . . . . . *R. P. Anderson Co., 1426 Castle Court*
St. Paul 1, Minn. . . . . . *Alexander Seymour, 418 Pioneer Bldg.*
Dallas 2, Tex. . . . . . *R. P. Anderson Co., 317 Texas Bank Bldg.*
Los Angeles 65, Calif. . . . *King & Anderson, 3635 Fletcher Drive*

Blue gives your product an air of distinction and quality

Blue, traditionally a color that stands for quality and royalty, enhances your product and says, "Buy Me!" Blue is easier to see . . . easier to remember. Many famous brands have proved through years of use that Blue acts as a powerful advertising, merchandising and selling tool. Put your package to work for you as a container and a salesman. Write today for samples.

MARYLAND GLASS CORPORATION • BALTIMORE 30, MARYLAND

Also Available in Clear Glass

PACK TO ATTRACT IN

Maryland Blue


SONOTONE
600
SCHICK
...and they're all
Packaged
BY Farrington
Farrington Manufacturing Company
GENERAL OFFICES: 76 J ATHERTON ST., BOSTON 30, MASS.
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whatever you want

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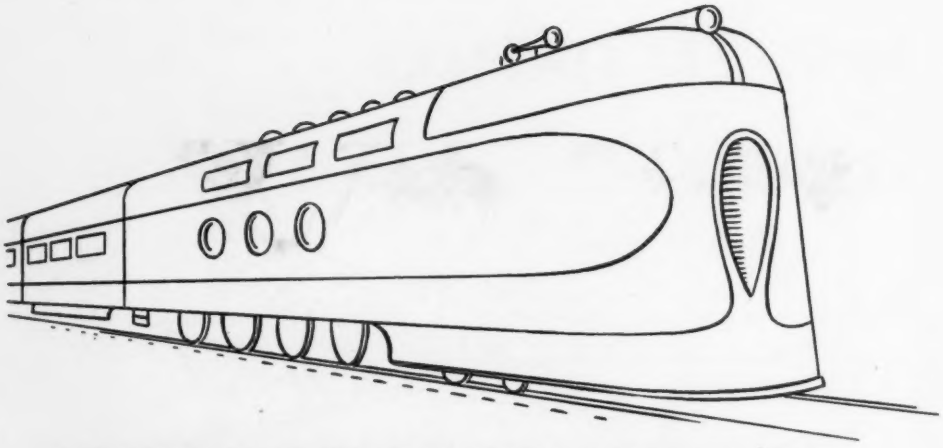
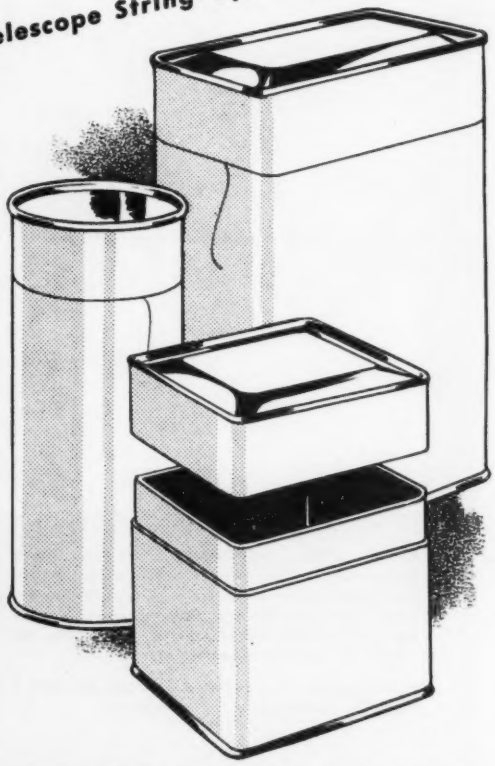
FOLDING CARTONS • PLAIN • PRINTED • LAMINATED • PARAFFINED



DESIGNED FOR BEAUTY AND DUTY!

Sefton's Single Telescope String-Opening Can

Sefton designs with two ideas in mind ...to bring you packages that are both attractive and efficient! Its innovation, the single telescope string-opening can, with a built-in reclosure, is an outstanding example of Sefton's dual designing. Streamlined, it's easy to open... and close... factory-sealed and tamper-proof.

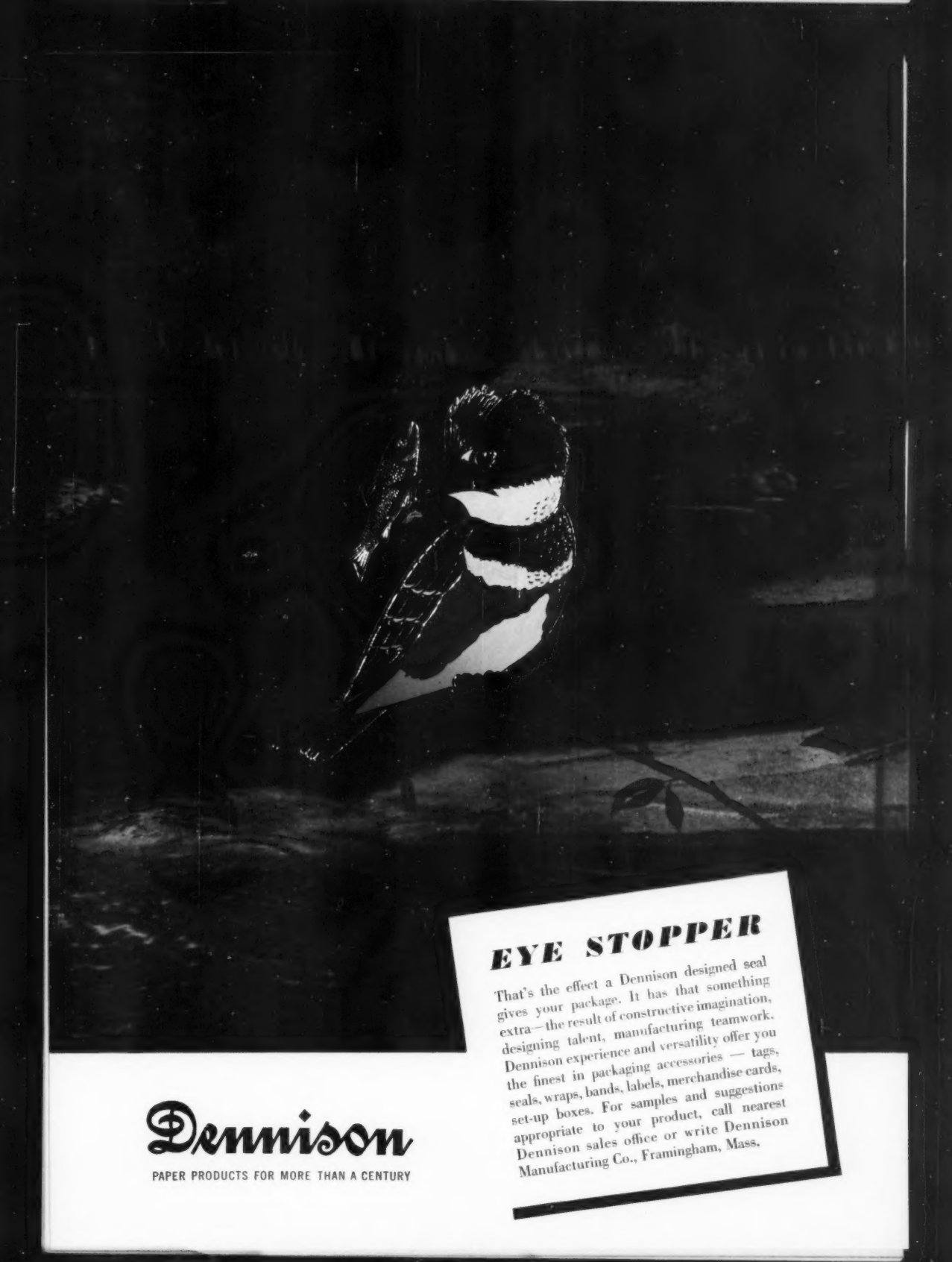


Sefton
FIBRE CAN COMPANY

ST. LOUIS . . . . . NEW ORLEANS
PORTLAND, ORE
DIVISION OF CONTAINER CORP. OF AMERICA

PAPER CANS... SPIRAL AND CONVOLUTE
PAPER AND METAL ENDS
ROUND AND IRREGULAR SHAPES
TUBES AND HEAVY CORES

DISTRICT OFFICES: • Los Angeles • Salt Lake City • Denver • Seattle • Chicago • Cincinnati • New Orleans • Boston • Detroit • New York • St. Paul • Atlanta • Memphis • Nashville • Portland



EYE STOPPER

That's the effect a Dennison designed seal gives your package. It has that something extra—the result of constructive imagination, designing talent, manufacturing teamwork. Dennison experience and versatility offer you the finest in packaging accessories — tags, seals, wraps, bands, labels, merchandise cards, set-up boxes. For samples and suggestions appropriate to your product, call nearest Dennison sales office or write Dennison Manufacturing Co., Framingham, Mass.

Dennison

PAPER PRODUCTS FOR MORE THAN A CENTURY

The Cross *Zip* Key-Reel clips inside milady's handbag to keep keys always handy. The fine embossed case and gold-colored spring chain make this a distinctive feminine accessory.

For this quality product the A. T. Cross Company of Providence, Rhode Island chose quality packaging by Dennison. The Dennison-designed package enhances sales-appeal in three ways:

IT DISPLAYS — The easel-backed counter carton takes up very little space and yet provides maximum display. The cover design is bright and informative; it tells the price and shows the product in use.

IT DISPENSES — The gravity-feed dispenser feature keeps boxes in place — makes selection by the customer easy and inviting.

IT PROTECTS — Two dozen of the sturdy individual boxes fit inside the display unit to provide maximum protection for the merchandise.

For extra protection and added sales appeal, Dennison designed set-up boxes can set off *your* product with smart, practical packaging. Dennison boxes offer you creative talent and technical skill built up during more than a century of leadership.

Call nearest Dennison office or write Dennison Box Division, Marlboro, Massachusetts.

LOOK TO

Dennison

FOR PACKAGING THAT CONFIRMS
THE VALUE OF YOUR PRODUCT

NATIONALLY FAMOUS

air-wick mist

Now pressure packed in the New 6oz. TALL

CROWN SPRA-TAINER

Widespread use of products that s-p-r-a-y was first made possible by Crown's invention of lightweight, low-cost Spra-tainer, a can specially constructed for pressure-packaging only.

Crown Spra-tainer is first on the Market, first in Sales because of exclusive "No Side Seam — No Top Seam" construction for utmost strength.

Look to Crown's inventive genius and mechanical skill for continued leadership in the manufacture of fine Cans for all products.

Mail this coupon today to Crown Can Co., Erie Ave. at H St., Phila. 34, Pa.

Send me more information on Spra-tainer.

Name_____

Address_____ State_____

City_____

Firm_____

CROWN CAN

DIVISION OF CROWN CORK & SEAL COMPANY

One of America's Largest Can Manufacturers • Plants at Philadelphia, Chicago, Orlando • Branch Offices: New York, Baltimore, Pittsburgh, St. Louis

MOISTURE - VAPORPROOF PROTECTION

Engineered to

MILITARY SPECIFICATIONS

Methods IA and II . . . JAN-P-117, JAN-B-121, JAN-P-131 . . . AN-C-67b and AN-E-1b . . . or the new MIL series . . . these are just a few of the many specifications on which Vanant field specialists can offer you packaging assistance.

CARTON
BARRIER
CARTON

(APPLICATION Method II b)

Illustrating design as used by Cooper and Cooper, Packaging Processors, Chicago, Ill.

VANANT

ENGINEERED PACKAGING

Call These VANANT Representatives on Your Packaging Problems

Vanant Products
62 Evergreen Avenue
Auburndale 66, Mass.

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Hulman Bldg.
Dayton, Ohio

R. M. Bracamonte & Co.
252 Spear Street
San Francisco 5, Calif.

Allied Commodities Co.
Andrus Bldg.
Minneapolis 2, Minn.

W. T. Segerstrom
2122 4th Ave.
Seattle 1, Wash.

Vanant Products
813 N. La Brea
Los Angeles 38, Calif.

Leonard Barol & Associates
1508 Finance Bldg.
Philadelphia, Pa.

William Diemer & Co., Inc.
274 Madison Avenue
New York 16, N. Y.

Protective Packaging Co.
542 S. Dearborn St.
Chicago 5, Ill.

Allied Commodities Co.
Kansas City Merchandise Mart
Kansas City 8, Mo.

The Smythe Company
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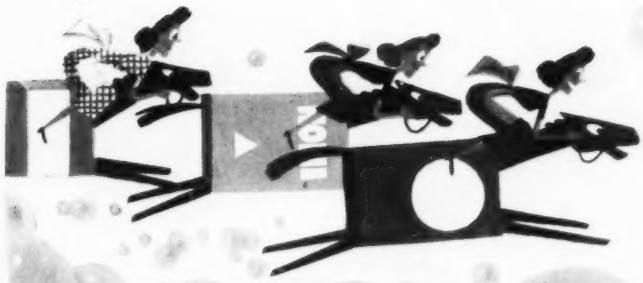
Milwaukee 12, Wisconsin

Standard Parts & Equipment Co.
904 N. Main - P.O. Box 4385
Fort Worth, Texas

VANANT PRODUCTS 730 W. Virginia St., Milwaukee, Wis. • Plant: Tomah, Wis.

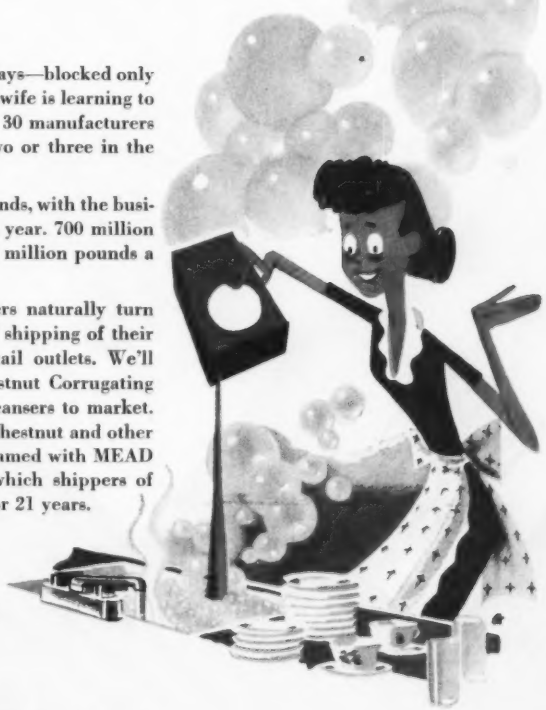


SUDS Sweepstakes

"Soapless soap" is coming up fast these days—blocked only by inadequate plant capacity. The housewife is learning to use these synthetic detergents, and over 30 manufacturers are bidding for her favor, as against two or three in the field 10 years ago.

Output in 1950 totaled over a billion pounds, with the business expected to expand by a third this year. 700 million pounds were produced in 1949; only 50 million pounds a decade ago.

Detergent as well as soap manufacturers naturally turn to corrugated cases for safe, economical shipping of their products—powders and liquids—to retail outlets. We'll make a clean breast of it—MEAD Chestnut Corrugating is ideally suited to help hustle these cleansers to market. This husky .009 corrugating is made of chestnut and other hardwood fibres for extra toughness. Teamed with MEAD Liner, it amply justifies the reliance which shippers of vulnerable products have placed in it for 21 years.



Mead Board is sold direct by

MEAD BOARD SALES, INC.

3347 Madison Road, Cincinnati 9, Ohio

NEWARK 2, N. J. 786 Broad St. LYNCHBURG, VA. CHICAGO 6, ILL. 205 W. Wacker Drive

"Please, can't we just finish this chapter?"

In homes all over America, books are making vital contributions to better living. And, in spite of competition from other fields, this increasing appetite for books of all kinds has built a three hundred million dollar industry.

For more than fifty years, Oxford Papers have played an important part in this expansion. They have helped make books more readable, more attractive — from school and scientific texts to best sellers.

Oxford Papers also enhance the appeal of book jackets, announcements, direct-mail and other printed selling that so ably promote the vast output of the industry.

If you print or publish books, or are concerned with increasing their sales, Oxford Papers will help you produce more effective results, by letterpress, offset or rotogravure.

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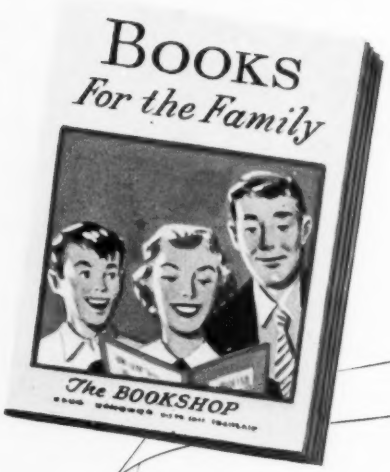
Help Build Sales

OXFORD PAPER COMPANY
230 Park Avenue, New York 17, N. Y.

OXFORD MIAMI PAPER COMPANY
35 East Wacker Drive, Chicago 1, Ill.

Mills at Rumford, Maine, and West Carrollton, Ohio



OXFORD PAPERS
Help Build Sales

Because good printing plays a part in your business, you ought to know this basic fact about Oxford Papers —

Our reputation for quality has been built on fifty years of concentrated experience in producing papers exclusively for printing and converting. That is why you can rely on Oxford Papers for finest results by letterpress, offset or rotogravure.

* * *

IT PAYS TO ASK FOR — AND USE THESE FINE OXFORD AND OXFORD MIAMI PAPERS

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UNCOATED PAPERS

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Wescar Offset
Wescar Satin Plate Offset
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English Finish Litho
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Knoxville, Tenn.	Louisville Paper Co.
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Omaha, Neb.	Western Paper Co.
Philadelphia, Pa.	Atlantic Paper Co. Wilcox-Walter-Furlong Paper Co.
Phoenix, Ariz.	Blake, Moffitt & Towne
Pittsburgh, Pa.	General Paper Corp. Brubaker Paper Co.
Portland, Maine	C. H. Robinson Co.
Portland, Ore.	Blake, Moffitt & Towne
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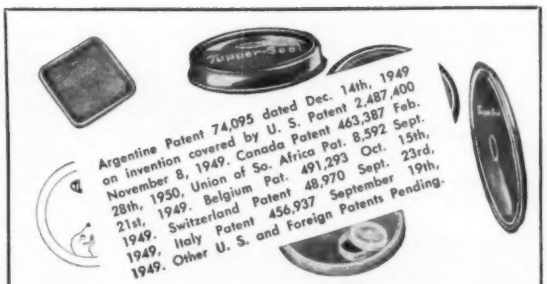
OXFORD PAPER COMPANY, *230 Park Avenue, New York 17, N. Y.*

OXFORD MIAMI PAPER COMPANY, *35 East Wacker Drive, Chicago 1, Ill.*

MILLS AT RUMFORD, MAINE AND WEST CARROLLTON, OHIO

Tupper Seal, air and liquid tight flexible covers fit, and are included in the sets of all Tupperware Canisters.



Argentine Patent 74,095 dated Dec. 14th, 1949 on invention covered by U. S. Patent 2,487,400 November 8, 1949. Canada Patent 463,387 Feb. 28th, 1950. Union of So. Africa Pat. 8,592 Sept. 21st, 1949. Belgium Pat. 491,293 Oct. 15th, 1949. Switzerland Patent 48,970 Sept. 23rd, 1949. Italy Patent 456,937 September 19th, 1949. Other U. S. and Foreign Patents Pending.

The Tupperware 50 oz. Canister is "standard equipped" with the Tupper Seal, air and liquid-tight flexible Pour All cover.

The Tupper Seal, air and liquid-tight flexible Pour All cover is used on every Tupperware 20 oz. Canister.

The Tupper Seal, air and liquid-tight, Pour All cover as a cover for 46 oz. cans; Tupperware Sauce Dishes and other containers of metal, glass or pottery. Foods easily dispensed without removing entire cover.

The Tupperware Wonder Bowls are usually fitted with Tupper Seal, air and liquid-tight covers.

TUPPER! Seals air and liquid-tight, flexible covers for Tupperware Tumblers, Canisters, Wonder Bowls, Cereal Bowls and many another container of glass, metal and pottery, the contents of which it is desired to keep fresh and wholesome.

TUPPER!

FORMAL NOTICE! 9th November, 1949

EXCLUSIVE!

U. S. Patent #2,487,400

The Tupper Corporation has attained a position of leadership in this industry by incurring great expense and expending painstaking effort in the development, design, manufacture and exploitation of its many world-known products.

The Tupper Corporation further has anticipated the inevitable attacks to which leadership is subject and has taken measures provided by law to preserve the creative rights to its products, methods and design by patent protection both in the United States and abroad.

Tupper Seals for Tupperware shown in this advertisement are just a few of the forms covered in this manner and are specifically covered by U.S. Patent #2,487,400.

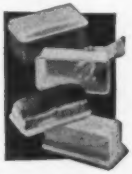
Only the Tupper Corporation, by U.S.Patent #2,487,400 has the right to make, use and vend container closures in connection with any and all types of containers throughout the United States and its territories as covered by the claims of the Patent.

Tupper Corporation will protect, according to law, the exclusive rights above granted

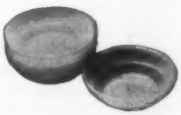
TUPPER CORPORATION

There's a Tupper Seal, air and liquid-tight flexible cover for Tupperware 2, 5, 8 and 12½ oz. Tumblers too, and these Tupper Seal, covers fit many other containers of metal, glass and crockery.

The Tupper Seal, air and liquid-tight flexible Pour Top cover, specially designed as a dispensing cover for specified diameters of containers holding foods such as syrups, salad dressings, catsup.



The cover of the Tupperware Bread Server which serves as a bread tray also is designed to give similar results as Tupper Seal, air and liquid-tight Flexible covers. Keeps contents fresh as no other such container.



When equipped with Tupper Seal, air and liquid-tight, flexible covers, Tupperware Cereal Bowls serve many another purpose.

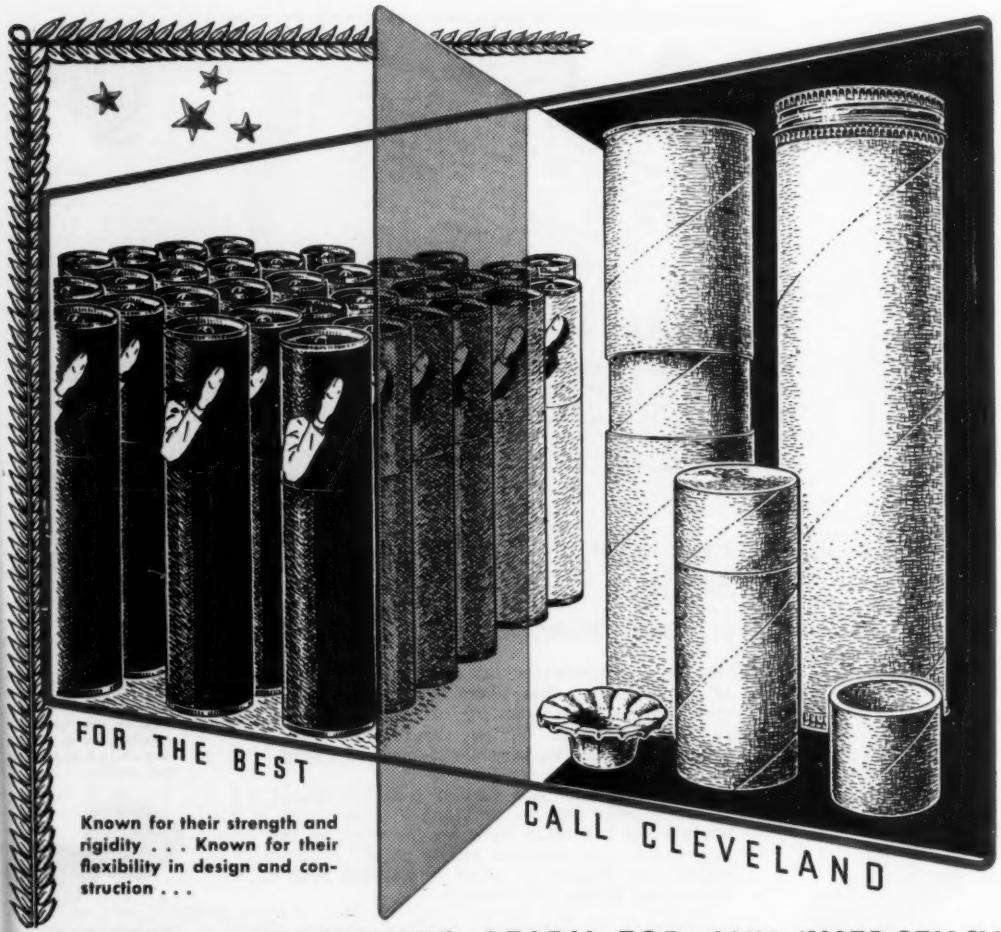
The Tupper Seal, air and liquid-tight flexible cover made for Tupperware 8 oz. Tumblers also fits and is sold with all Tupperware Funnels as a base when funnels are used as storage containers.

TUPPER CORPORATION

Manufacturers of — CONSUMER, INDUSTRIAL, PACKAGING AND SCIENTIFIC PRODUCTS

FACTORIES: Farnumsville, Mass., and Cuero, Texas **New York Show Rooms 225 Fifth Ave.**

ADDRESS ALL COMMUNICATIONS TO: Department A



Known for their strength and rigidity . . . Known for their flexibility in design and construction . . .

CLEVELAND CONTAINERS READY FOR ANY EMERGENCY

They are ready to meet the requirements of manufacturers whether for their usual civilian products or their military production orders.

Our immense plant capacity and the convenience of our production facilities enable us to offer reliable service and meet the delivery needs of today's exacting manufacturers on schedule.

CLEVELAND CONTAINERS SIMPLIFY SPARE PARTS PACKAGING

They lower costs and give that needed protection between plants, or for products in transit and in storage.

Consult us on your needs. Samples and suggestions gladly furnished.

The CLEVELAND CONTAINER Co.
6201 BARBERTON AVE. CLEVELAND 2, OHIO
• All-Fibre Cans • Combination Metal and Paper Cans
• Spirally Wound Tubes and Cores for all Purposes

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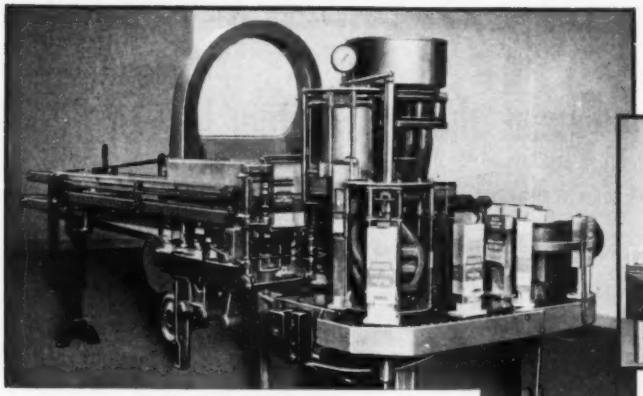
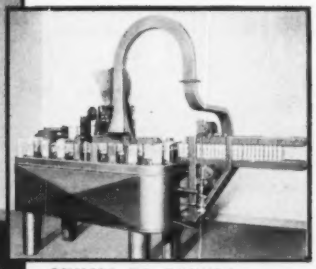
CONSERVE MANPOWER

with PACKOMATICS





OUNCES TO POUNDS — standard containers or individual serving or sample packages, formed, filled and sealed automatically with PACKOMATIC top and bottom carton sealers and volumetric fillers. Standard model left; miniature model above.

In these days of increasing demands on the nation's manpower resources, more and more manufacturers of all manner of products are turning to complete, automatic packaging, production line to shipping platform. For more than 30 years, J. L. Ferguson Company has been helping America's foremost package goods merchandisers reduce production costs, conserve space, speed processing and help keep resale prices in line with *modern, automatic* packaging machinery.

You too can share the experience, facilities and know-how that Packomatic engineers are applying to the problems of carton forming, filling and sealing—also to shipping case packing, gluing, sealing, dating (coding) and imprinting—at speeds up to 3,000 per hour.

PACKOMATIC packaging equipment includes:

- Shipping Case Packers
- Case Gluers-Sealers
- Case Imprinters
- Carton Fillers-Sealers
- Volumetric Fillers
- Carton Making Machines
- Dating (Coding) Devices
- Paper Can Tube Equipment

Regardless of the size or scope of your operation, your inquiry incurs no obligation to purchase. Write J. L. Ferguson Company, Route 52 at Republic Avenue, Joliet, Illinois, or phone Joliet 6275.

PACKOMATIC

T. M. REG. U. S. PAT. OFF.

PACKAGING MACHINERY

J. L. FERGUSON CO. JOLIET, ILL.

Chicago, New York, Boston, Philadelphia, Tampa, Cleveland, Denver, San Francisco, Los Angeles, Baltimore, Seattle, Portland, Dallas, New Orleans

FOR FREE and SEMI-FREE FLOWING PRODUCTS

1. *Telescoping Volumetric Filler*
2. *8-pocket Filler for rectangular cartons.*
3. *4-pocket Filler for 1 to 25 lb. containers.*
4. *8-pocket Filler for round containers.*

FOR PACKAGING SOFT POWDERED PRODUCTS

PACKOMATIC turret-type, auger packer-weigher, for flour and other soft powdered products. Handles containers from 6" to 22" high; weights from 1 lb. to 25 lbs.

Betner...*America's Busiest Bags*

Whatever the packaging need, there's a Betner bag to fill it!

Just a few examples of Betner's complete bagging service:

DUO-TITE . . . *the Perfect "No-Sift" Bag*

At last, the ideal bag for products which must be packaged in siftproof containers . . . insecticides, fertilizers and other dry chemicals. DUO-TITE's sturdy construction combines special liners with folding, gluing, and heat-sealing. Available in sizes holding up to 25 lbs. of bulk powdered material.

THERMOSEAL . . . *the Bag with 20% More Protection*

It's a fact. There is 20% more protection offered by Betner's THERMOSEAL than by other closures. Best of all, THERMOSEAL eliminates staples and other adhesives, and insures water-vapor protection, siftproofness and retention of flavor.

BENCOSEAL . . . *the Bag or Wrap with Extreme Water-Vapor Protection*

Absolute sanitation, dryness and flavor freshness are guaranteed by this unique combination of paper, metal foil and tissue laminated with a thermoplastic wax film. BENCOSEAL may be heat-sealed at moderately high temperatures without fear of blocking, thereby rendering itself to high speed production. It lends itself to any type of printing for consumer eye-appeal.

FLAV-O-TAINER . . . *the Bag with Vacuum-Packed Freshness*

Whenever freshness is a must—Betner's FLAV-O-TAINER delivers it! Lined with Pliofilm (mfd. by Goodyear T. & R. Co.), all inner seams are hermetically sealed. And simply by replacing air with inert gas, and heat sealing at top, FLAV-O-TAINER becomes an air tight unit.

A complete bag service . . .

from idea to finished bag. Also machinery for closing coffee bags, and inserting and closing liner bags in cartons. Your inquiries are welcome. Samples with full technical information will be promptly supplied.

Benj C Betner Co DEVON, PA.

BENJ. C. BETNER CO. of VA., Richmond, Va.; BENJ. C. BETNER CO., of WISCONSIN, Appleton, Wisconsin; BENJ. C. BETNER CO., Paris, Texas; BENJ. C. BETNER CO. of CALIFORNIA, Los Angeles, California; Southern Packaging Corporation, Affiliate of BENJ. C. BETNER CO.

FISHING FOR A BETTER PACKAGE?

FROM FISHWORMS TO THE FINEST SURGICAL COTTON R. C. FIBRE CANS WILL SOLVE YOUR PACKAGING PROBLEMS

For more than 45 years, R. C. Can engineers have steadily increased the packaging versatility of fibre cans. Ingenious designs affording ample protection have solved many unique filling, handling and dispensing problems for manufacturers of a great variety of products. Today, R. C. Fibre Cans—planned for production at **LOW UNIT COST**—are used for foods . . . spices . . . drugs . . . cosmetics . . . insecticides . . . automotive supplies—**FOR ALMOST EVERY TYPE OF PRODUCT.**

Talk with R. C. about your packaging needs—you'll get friendly and valuable advice from men who have the experience to appreciate your special problems.

FOUR STRATEGICALLY LOCATED PLANTS FOR SPEED AND CONVENIENCE

R·C· CAN COMPANY

R. C. CAN CO. The Stamp of Quality ST. LOUIS, MO.

MAIN OFFICE and Factory **103 Chambers St., St. Louis 6, Mo.**

Branch Factories: Arlington, Tex.; Rittman, O.; Kansas City, Mo.

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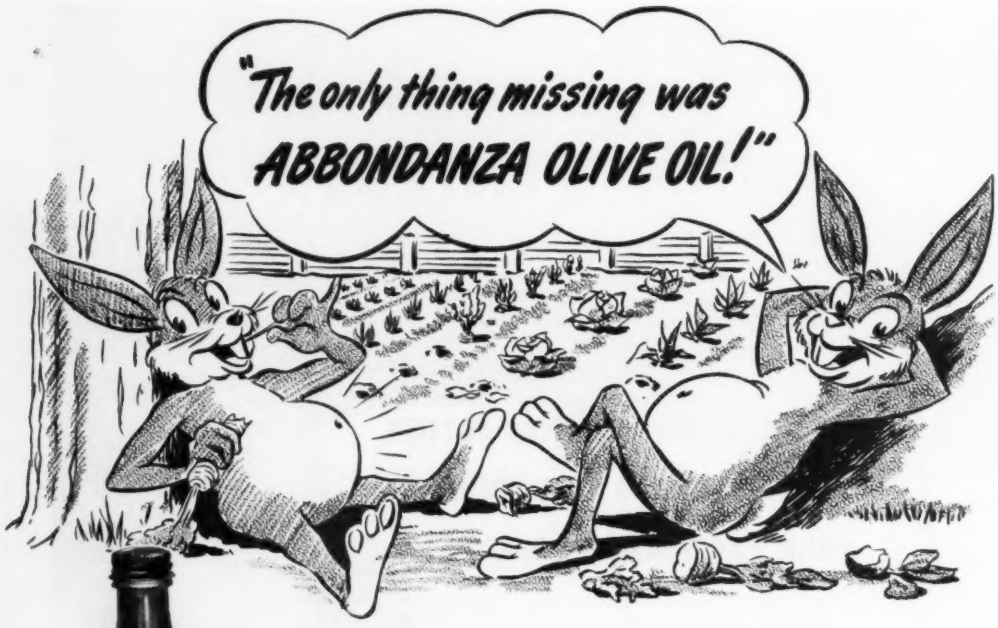


Take garden fresh vegetables . . . toss them lightly while you sprinkle them with Abbondanza Olive Oil. Boy!—you've really got a salad to remember. This pure imported olive oil is fine for cooking, too. It's one of the secrets of those wonderful Italian dishes that most everybody likes.*

These products are sealed with Crown Screw Caps . . . the closures that more and more packers are using these days. They've found that when they come to Crown, they are sure of getting closures that are satisfactory in every way.

Crown has years of sealing experience and fully equipped laboratories where all processing or packing conditions can be duplicated on a small scale. These facilities are at your disposal to help you determine *scientifically* the closure and liner that is correct for your particular product. This analysis will be made for you without cost or obligation. Why not take advantage of it? Crown Cork & Seal Company, Baltimore 3, Md. *World's Largest Maker of Metal Closures.*

CROWN CLOSURES

Approved by Millions of Housewives

*Abbondanza Olive Oil is packed by Venice Importing Co., Brooklyn, New York.

Candy cigarettes cartoned 12 TIMES FASTER

With a CECO Model 45 CARTONER

REG. U. S. PAT. OFF.

Stephen F. Whitman & Sons, Inc., famous candy manufacturers, are enjoying a sweet saving of over 90% in labor since they installed a new CECO Model 45TT Automatic Cartoner for their candy cigarettes.

Mr. Frank R. Wolf, of Whitman's engineering division, reports that they are having very good results with their new CECO, and are very pleased with it. Two of their fastest girls formerly hand-packed a total of 30 cartons, each containing 48 packs of 8 cigarettes. Two girls are now packing 350 to 425 cartons in the same 8-hour day with a CECO Cartoner.

CECO Model 45 feeds folded packages from a stack, sets them up, inserts 8 cigarettes into each package, tucks both ends, and conveys the finished packages to the display cartons, all automatically.

If you package unit or multiple items of any non-sifting products such as bottles, machine parts, foods, baked goods, etc., CECO can help you to reduce your labor costs. Quick adjustability without tools by unskilled help permits economical short or long runs of various size cartons. A CECO Cartoner usually pays back its low initial cost within a year out of savings in labor alone.

Let us prove it to you without obligation.

SEND FOR NEW CECO BULLETIN

CECO *Models*

Model	Carton Feeding And Opening	Product Insertion	Sealing or Tucking
45	Automatic	Automatic	Automatic
40	Automatic	Manual	Automatic
3901	Manual	Manual	Automatic

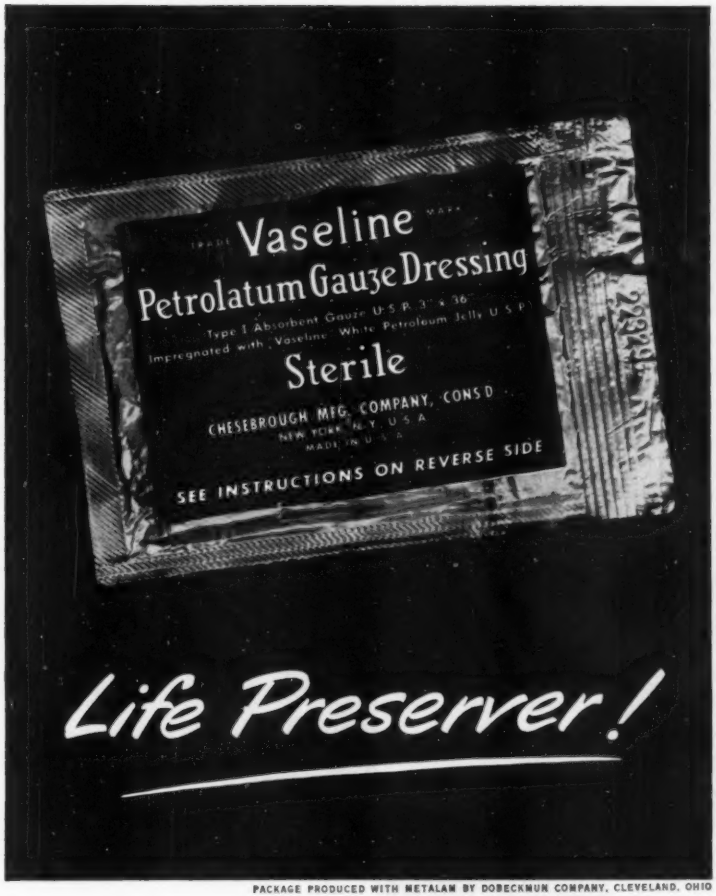
ALL CECO models can be arranged to glue-seal both ends, seal one end and tuck in the other, or tuck in both ends. Range of adjustability can be varied as required.

CONTAINER EQUIPMENT CORPORATION

MEMBER, PACKAGING MACHINERY MANUFACTURERS INSTITUTE

20 Oriental Street, Newark 4, N. J.

BALTIMORE • CHICAGO • JACKSON • PITTSBURGH • ROCHESTER
ST. LOUIS • SAN FRANCISCO • SAVANNAH • TORONTO



PACKAGE PRODUCED WITH METALAM BY DOBECKMUN COMPANY, CLEVELAND, OHIO

A soothing, protective dressing like this owes its long life to the protection that can only be had with aluminum foil.

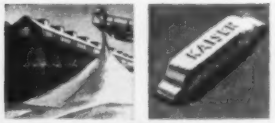
The preferred dressing for burns, abrasions, surgical wounds, it is kept dependably sterile by the aluminum foil envelope and is always ready for instant use.

With the envelope sealed, the dressing retains its sterility and usefulness indefinitely, because aluminum foil is non-porous, vapor-tight, moisture-proof.

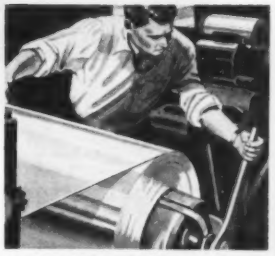
Many of these advantages of Kaiser Aluminum Foil can be applied to other pharmaceuticals as well as to products such as food, medicine, fluids, electronics, machinery.

Perhaps it's the answer to one of *your* customer's problems. If so, call us now and we'll be glad to work with you.

TECHNICAL ASSISTANCE—If you are now using aluminum foil, we will be glad to assist you in solving any problems. If you are *not*, our skilled technical men will show you how it may be applied to your product.



DEPENDABILITY—As a completely integrated foil producer—not a manufacturer or converter—Kaiser Aluminum assures a dependable supply of highest quality aluminum foil.



EXPERIENCED PERSONNEL—Operators with years of experience in the aluminum foil industry make sure that foil is tailored exactly to your needs.

PROMPT SERVICE—For prompt, personal attention, call us. Kaiser Aluminum & Chemical Sales, Inc. Sales offices in principal cities.

Kaiser Aluminum

Setting the pace . . . through quality and service

CROMWELL'S
"PAPER ENGINEERING"
gives you the right paper for your job

Some of Cromwell's Paper and Services:

COPPER-PAK
. . . paper that prevents tarnishing of metals by smoke and sulphur gases

MARTIN
. . . non-abrasive and non-stain paper

FERRO-PAK
. . . paper that prevents corrosion of ferrous metals by a vapor action

CROMPACO
. . . paper that is resistant to water, oils and grease

SIMMONS
. . . non-friction and non-scuff paper

- Government packaging
- Specialty bags
- Multi-wall sacks
- Industrial covers
- Case liners
- Tympan

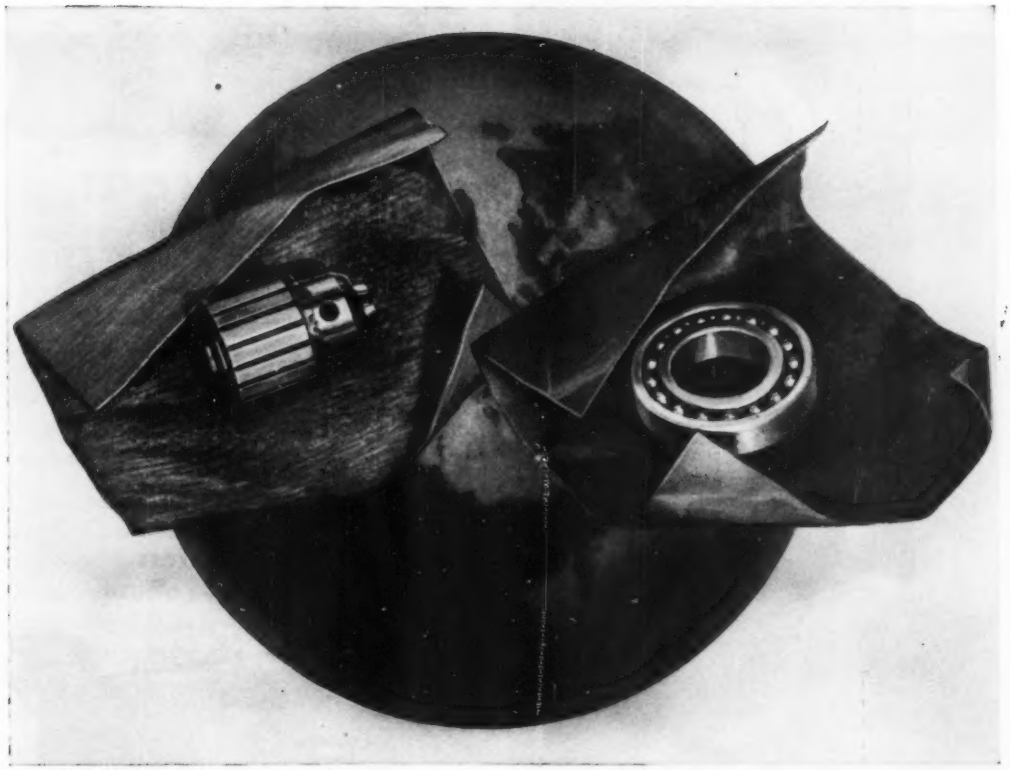
SCIENTIFIC LABORATORY ANALYSIS IS PART OF CROMWELL'S "PAPER ENGINEERING" SERVICE. Experience gained in many fields is applied to help determine the best paper and best design for your job.

With Cromwell's "Paper Engineering" Service you reduce damage and damage claims. You do not get too much or too little packaging. Your product is protected against marring, scratching, moisture or vapor and *your customer* is *satisfied.* With Cromwell paper, use of additional protection or preservatives (oils, grease, etc.) is unnecessary in shipping or storage, and your production costs are cut.

For full facts write Cromwell today.

Ask for Cromwell's "P. E." Service

CROMWELL PAPER COMPANY
4701 South Whipple Street
Chicago 32, Illinois



Combination of Lumarith Acetate Transparent Film and kraft paper passes Joint Army & Navy Specification Jan-B-121

Combination Wraps USING Lumarith* Acetate TRANSPARENT FILM

DELIVER THE GOODS...ANYWHERE

Lumarith combinations with kraft paper, metal foil, fabric, films and many other materials, meet many government packaging specifications. Lumarith is waterproof and non-corrosive . . . protects machinery against rust. Completely greaseproof, Lumarith will hold in the most penetrating oils and greases. Lumarith combination wraps dead-fold around the most intricate machine parts to form air-tight packages—tough, lightweight and space-saving.

For information about the latest combination package developments in food, drugs and machinery write to: Celanese Corporation of America, Plastics Division, Dept. 108-E, 180 Madison Avenue, New York 16. In Canada: Canadian Cellulose Products, Ltd., Montreal and Toronto.

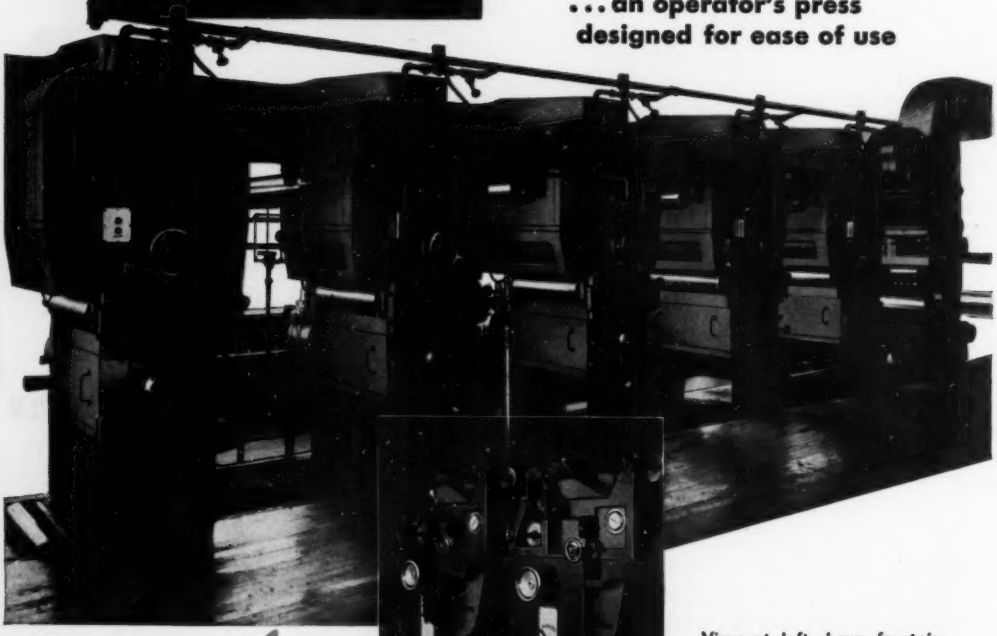
Celanese* PLASTICS

*Reg. U. S. Pat. Off.

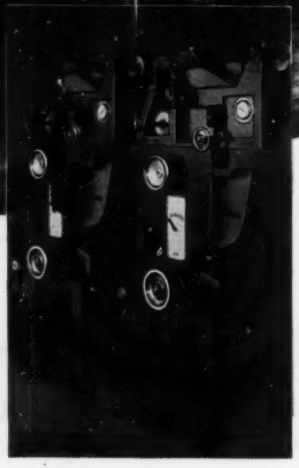
GET THE FACTS NOW!

on this great new KIDDER GRAVURE PRESS

...an operator's press designed for ease of use



ADEQUATE SPACE BETWEEN UNITS is among the many outstanding advantages of the new Kidder Gravure Press, shown above.



View at left shows fountain enclosure, drying duct and ink reservoir.

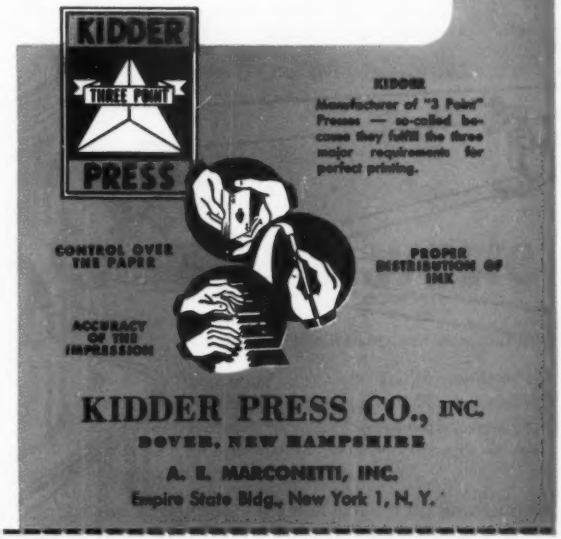
This remarkable new press by Kidder — praised by operators, praised by owners — is well worth your *immediate* investigation.

Designed with the operator in mind, it has a multitude of convenience features of great worth to converters. You will find it ideal for high-speed multi-color printing — typical of Kidder insistence on outstanding work efficiency.

Find out now how corrections in register can be made without pressman leaving observation post . . . how doctor blade oscillation mechanism allows complete adjustment of stroke . . . how *correct* pressure is assured for printing all kinds of materials. Find out also about Kidder's *new, unique threading device!*

These and many other built-in extra quality features are described in the bulletin offered below. Make *your* press investment a wise investment with the new Kidder Gravure Press.

Converters who now use the rotogravure process or who are contemplating using it should see this new press in operation. Contact A. E. Marconetti, Inc., Empire State Building, New York 1, New York, for further information.



FREE ILLUSTRATED BULLETIN gives full information on the remarkable new Kidder Gravure Press. Includes photographs, diagrams, specifications, detailed description of special Kidder features. Yours at no cost or obligation to you.

Kidder Press Company, Inc.
Dover, New Hampshire

Gentlemen:

☐ Please send me my free copy of the Kidder Gravure Press Bulletin.

Name..... Position.....

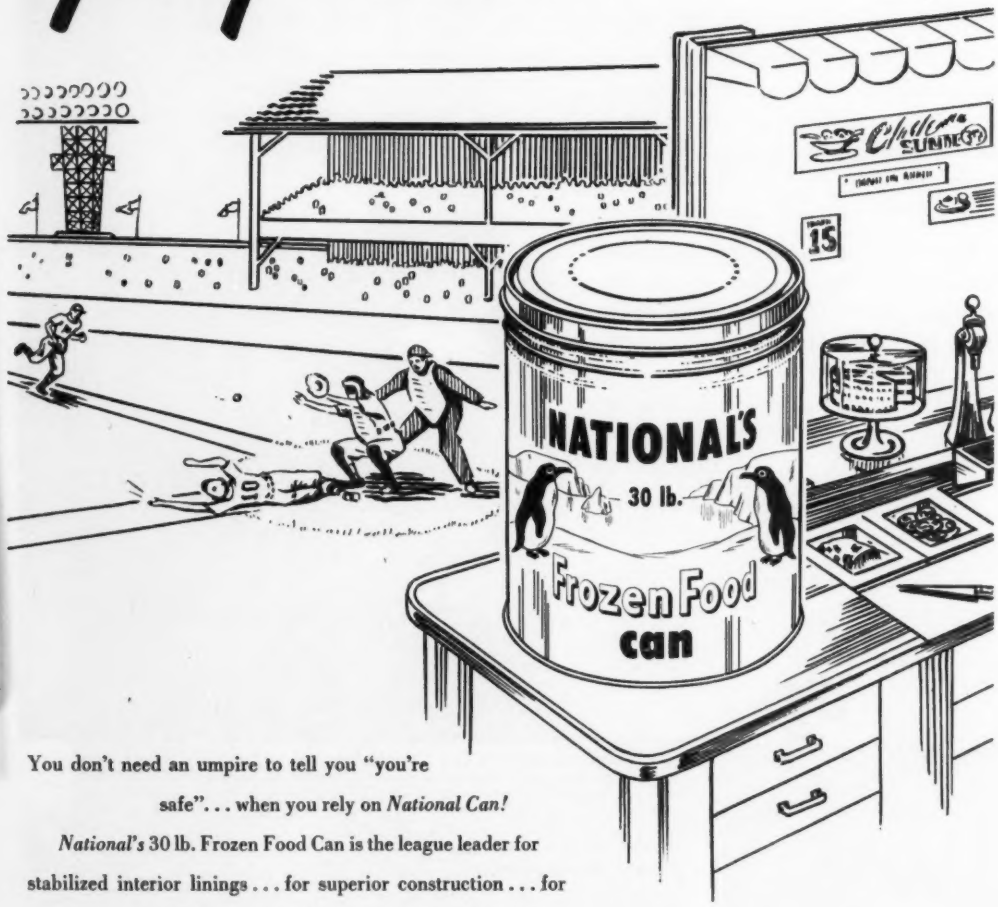
Company.....

Street.....

City..... Zone..... State.....

NATIONAL CANS

Going Places---



You don't need an umpire to tell you "you're safe"... when you rely on *National Can!*

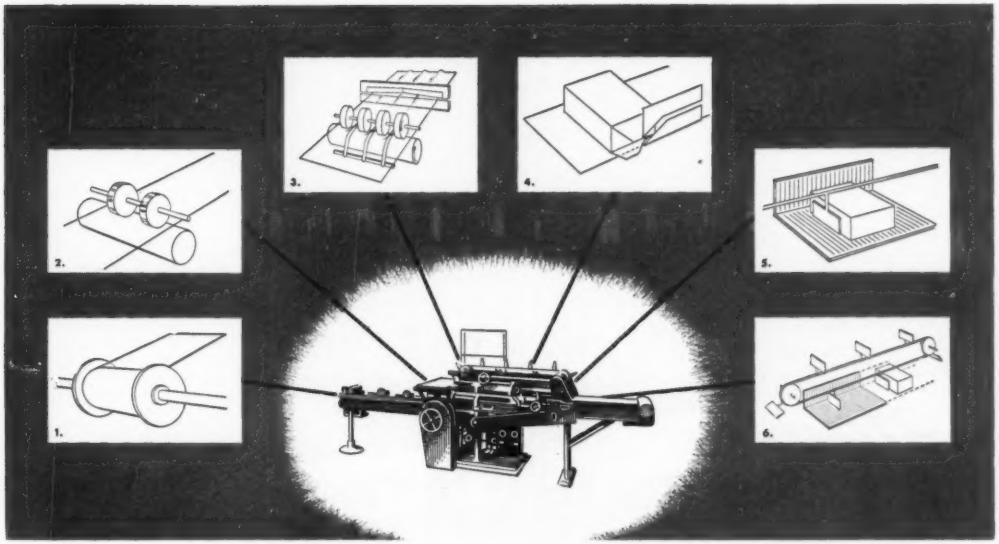
National's 30 lb. Frozen Food Can is the league leader for stabilized interior linings... for superior construction... for trouble-free performance on the production line.

You'll be "batting a thousand" when you let *National Can* help your product "go places."

50 YEARS OF SERVICE
NATIONAL CAN CORPORATION
1901 • 1951

NATIONAL CAN CORPORATION

110 EAST 42nd STREET, NEW YORK 17, N.Y.



Check these key spots to avoid Cellophane waste

Film supplies can often be stretched by keeping packaging machines at the peak of efficiency. Here are some points where careful control helps get more packages from each roll of film:

1. Where the roll is mounted on the machine, guard against "telescoping." Side plates that fit snugly against the roll ends are effective.

2. Worn feed rolls are trouble makers. If feed rolls become glazed, film will slip . . . the result is an uneven or excessive cutoff length. It's sound economy to replace worn feed rolls promptly.

3. The cutoff knife needs occasional sharpening. This is one of the first places to check if you have trouble with the proper feeding of the sheet.

4. The folding parts of a machine need regular checking. Tight fittings may cause drag, pull-outs, dog-ears, or even torn wrappers. A loose adjustment can also result in dog-ears, or an untidy wrap. To avoid production breaks and wasted packages, make sure machines are always at correct adjustments.

5. Sealing plates must be kept at proper temperature to avoid waste. What's more, plates must fit at least tight enough so that firm contact is made between all layers of wrapping material. To function properly, sealing plates may need regular cleaning, too.

6. Avoid scorching and rewraps due to stoppage of packages on heated sealing plates. Have finished packages removed when machine is stopped, or equip machine with a power-driven carry-through—it can pay its cost by reducing waste.

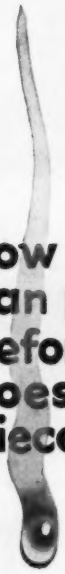
You, of course, are the best judge of the possibilities for economy in your plant. Machine manufacturers can help you keep employees trained to avoid waste. Your Du Pont representative, too, will be glad to study your particular operation, and make recommendations. E. I. du Pont de Nemours & Co. (Inc.), Film Department, Wilmington 98, Delaware.

DuPont Cellophane

Shows what it protects . . . Protects what it shows

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



how wet can paper get before it goes to pieces?

Soak ordinary paper in water, and what happens? Almost immediately it weakens—disintegrates. Now try Patapar Vegetable Parchment. Soak it as long as you please—even *boil* it. Patapar comes out strong and beautiful.

High wet-strength is just one of Patapar's unique qualities. Another is its ability to resist penetration of grease, fats, oils.

For complete information about Patapar and how it might be helpful in your business, write for booklet T, "The Story of Patapar." This little booklet tells about the manufacture of Patapar, its basic qualities, its 179 different types and its many, many applications. Why not send for your copy today?

Perfect Paper for

Butter wrappers
Ham boiler liners
Deep freeze wraps
Can liners
Fish wrappers
Cheese wrappers
Margarine wrappers
Milk and cream can gaskets
Bacon wrappers
Vegetable wraps
and many other uses

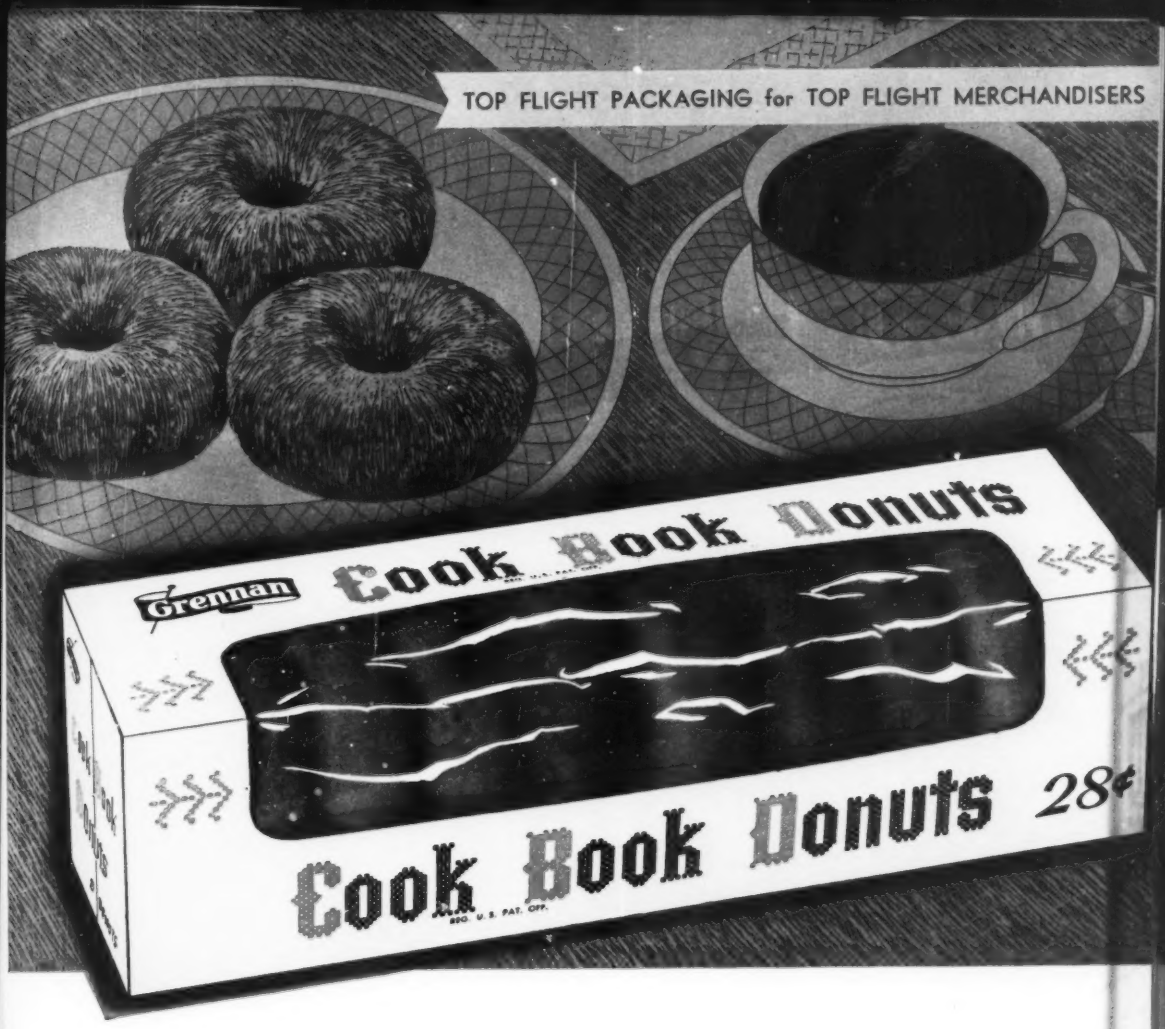
Patapar is furnished plain or beautifully printed in one or more colors.

Patapar
REG. U.S. PAT. OFF.
HI-WET-STRENGTH
GREASE-RESISTING PARCHMENT

This Keymark, nationally advertised symbol of wrapper protection, can be included on printed Patapar wrappers

Paterson Parchment Paper Company
Bristol, Pennsylvania
Headquarters for Vegetable Parchment since 1885
West Coast Plant: 340 Bryant Street, San Francisco 7, California
Sales Offices: 122 E. 42nd Street, New York 17, N. Y. • 111 W. Washington St., Chicago 2, Ill.

TOP FLIGHT PACKAGING for TOP FLIGHT MERCHANDISERS



APPETIZING RICHNESS sells Grennan's Doughnuts. This window carton gives customers a visual sample unmarred by spots or stains due to grease absorption. Our Keep-Rite Board with a special greaseproof lining keeps the carton exterior clean and attractive. Our carton construction with our special adaptation of set-up machines resulted in important packaging economies for Grennan Bakeries.

Planned Packaging MOVES MERCHANDISE

THE OHIO BOXBOARD CO.

"Home of PLANNED PACKAGING"

RITTMAN • OHIO

Manufacturers of paper board, folding boxes, corrugated and fibre shipping containers, and converted specialties
SALES OFFICES: RITTMAN • AKRON • CUYAHOGA FALLS • CLEVELAND • COLUMBUS • YOUNGSTOWN
CINCINNATI • TOLEDO • MANSFIELD • PITTSBURGH • ERIE • NEW YORK • CHICAGO

Put more "SELL" into your packages with FABRICATED LEATHER*

- Much Lower in Cost than Leather
- Distinctive Patterns—Attractive Colors
- Tough and Durable
- Easy to Cut and Handle in Production

UNI-MARK manufactures only FABRICATED LEATHER, not finished packages. These are only a few of the many packages that can be covered with FABRICATED LEATHER.

UNI-MARK, INC.

New York: 454 Fourth Avenue

Boston, Mass.: 20 East Street

FABRICATED LEATHER
for packaging

*Registered Trade Mark. Composed of approximately 40% ground leather by volume, plus other ingredients.

at FORD...

Protective packaging for a precision part

IN SPARKLING ALCOA FOIL

"Give her the gas" means extra work for the Genuine Ford Economizer Valve. Functioning under loaded conditions, or at high speeds, this small precision part supplies additional fuel to the carburetor.

Replacement valves—shipped round the world—must be protected from dirt, moisture, heavy contact. Ford packaging experts solve this problem with a foil-lined tube that acts as a vapor barrier, protects the sensitive neoprene diaphragm from oxidation . . . allows packaging of more units, *with less effort*, in a single container.

If your product needs protective packaging, consider the many possible applications of Alcoa Aluminum Foil. Though current supplies are limited by military requirements, we will gladly send you the names of leading packaging firms qualified to advise you on material availabilities as well as to assist you with present or long-range packaging problems.

Write to: Aluminum Company of America, 1760E Gulf Building, Pittsburgh 19, Pa.

ALCOA
ALUMINUM

Package shown manufactured for Parts & Accessories—Ford Division by Cleveland Container Corp.

AN ORIGINAL LITHOGRAPH BY HENRY E. WINZENREID

THE PROOF OF THE PUDDING . . .

Makers of prepared desserts know that "the proof of the pudding is in the eating." Their materials are so hygroscopic that carefully designed, moisture-proof packages are required to keep the dampness out and the goodness in. That's why so many well-known powdered desserts are protected by laminated Riegel papers specially designed for the job.

There's a Riegel Paper for almost any requirement you may have in protective packaging . . . a paper you can depend on for economy and production efficiency. We feel sure we can serve you in the same effective manner we now serve the sales leaders in so many different fields.

Riegel Paper Corporation • 342 Madison Avenue, New York 17, N. Y.

Riegel **TAILOR-MADE PAPERS FOR PROTECTIVE PACKAGING**

For over 50 years

discriminating manufacturers

have been building sales

of products which are packaged

in Rowell Containers.

Expert craftsmanship.

Magnificent color printing.

Prompt deliveries.

E. N. Rowell Co. Inc.
Manufacturers of Fine Paper Boxes
BATAVIA, N.Y.

ALL 4 FILLED ON 1 ARENCO

● Where speed, cleanliness and accuracy are required, the Arenco Filler cannot be surpassed. Whether you're packaging water-thin suspensions of antibiotics, medium viscosity creams or heavy non-flowing compounds, they all can be handled efficiently by the Arenco.

Not only is the Arenco versatile in the range of products it fills, but it fills an extreme range of containers as well—from tiny 1 cc vials to giant 250 cc (8¾ ounce) tubes.

Sterility Only stainless steel or resistant metal contacts the product being filled. All of these parts—including the stainless steel single cylinder pump—are easily and quickly demountable for cleaning and sterilization.

Changeovers Size adjustments and material changeovers take only moments—not hours. And the Arenco will fill most products at speeds from 40 to 55 containers per minute.

Accuracy Even when the smallest quantities are being filled, the Arenco maintains the high degree of accuracy for which it is world famous. Recent tests on filling 1 cc ampoules show accuracy to ±1%. "Give-away" on larger fills is even less.

Service The same organization which services 2,000 other Arenco machines in all parts of the country is available to service your Arenco filler. Competent mechanics and complete stocks of spare parts are always on hand. The nearest Arenco representative can supply full details. Contact him now.

Hopper or filling head to fit product. No container, no fill. Automatic cleaning and cap tightening for tubes.

ARENCO *Machine Co.*
INCORPORATED
25 West 43rd Street, New York 18, N. Y.

REPRESENTATIVES

R. P. Anderson Co., 317 Texas Bank Bldg., Dallas 2, Texas
King & Anderson, 1355 Market St., San Francisco 3, California
Tom McLay, P. O. Box #14, Port Deposit, Maryland
Packaging Equipment, Inc., 2013 Olive St., St. Louis 3, Missouri
Burnard C. York, Packaging Machinery, 5807 W. North Ave., Chicago 39, Ill.

U. S. Patent 1951

Roll-up *travels in a tube,*

always ready for action!

The Roll-up is a single sheet display... comes in a cardboard tube, which serves as vertical standard for the display set up.

Convenient for salesmen to carry in their cars, it needs no special installation or particular skill, can be assembled by an amateur! The Roll-up is usable anywhere in a store, window, counter, showcase... is usable more than once.

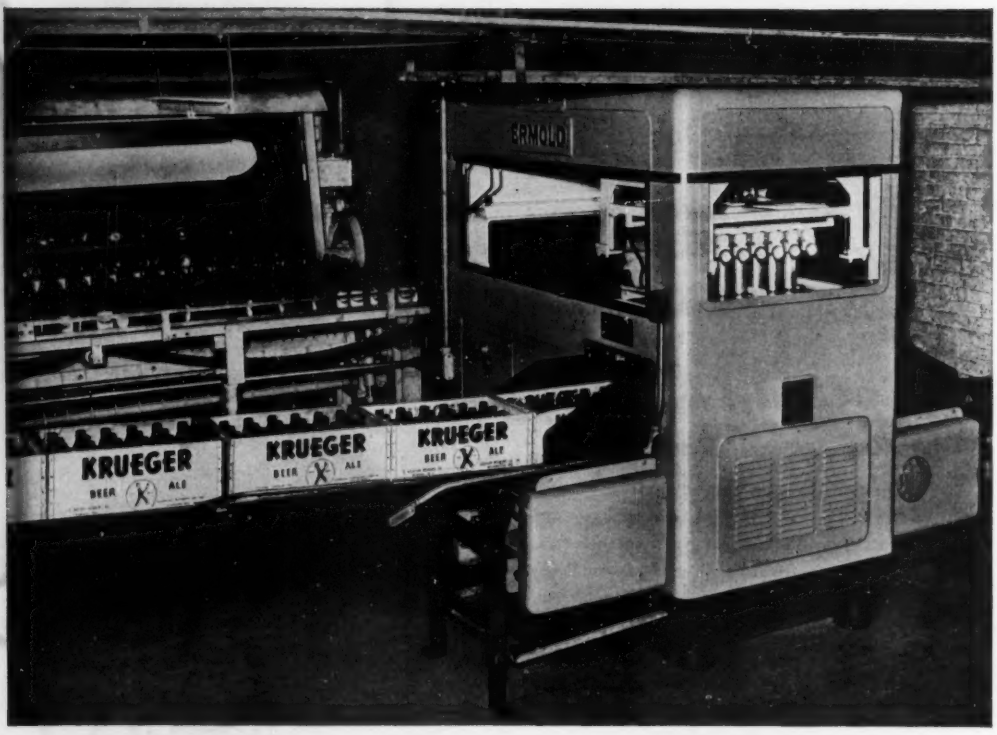
The small sizes are ideal for reproducing magazine advertising, the maximum size is as large as a small poster... Attention getting, and distinctive, the Roll-up suggests a distinguished quality product ...identifies merchandise on display.

Especially suited to the advertiser with limited distribution and dealer franchises, the Roll-up can be placed and installed by your own representatives...gives excellent point-of-sale representation. Low in cost, as it requires little paper or board.

The Roll-up is only one of our specialties. Others are animated displays, jumbo floor stands, and conventional two-dimensionals... but all very good. No trouble to show them—or you!

EINSON-FREEMAN CO., Inc.
Never-in-a-rut Lithographers
Starr & Borden Avenues, Long Island City, New York

WE ORDERED TWO MORE ERMOLD® AUTOMATIC UNPACKERS



The G. Krueger Brewing Company of Newark, New Jersey put their *first* Ermold Automatic Unpacker on a line in December. They were so satisfied with the performance and economic advantages of this machine that they ordered *two more!* Krueger joins the fast-growing list of breweries who are not only using the Unpacker, but rapidly installing it on *all* their larger lines. Ask us to show you how the Unpacker can be put to profitable use in *your* bottling shop.

EDWARD ERMOLD COMPANY

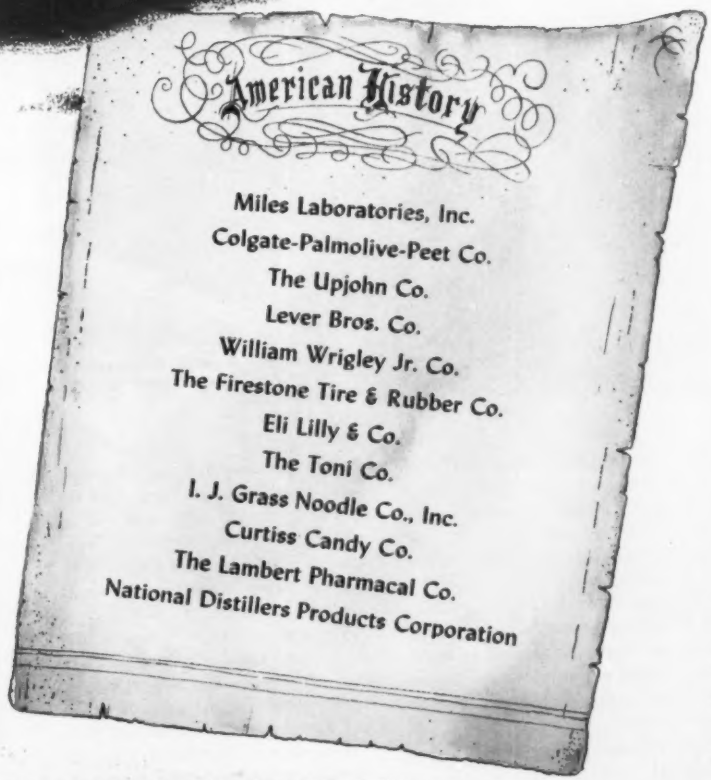
652 HUDSON STREET, NEW YORK 14, N. Y.

OFFICES: BOSTON • CLEVELAND • LOS ANGELES • MILWAUKEE • ST. LOUIS • SAN FRANCISCO • MONTREAL • TORONTO • MEXICO • CUBA • ENGLAND

FOUNDED 1880 • *Famed for Labeling Leadership for 71 Years* • INCORPORATED 1911

EE 148

Companies Using ACM CARTONS Today!



—Like a page from the history of American business—

ACM facilities include complete development and processing operations for your carton problems, from the boxboard—made in our own mills in Indiana and Ohio—to the finished carton printed on our board on our own modern high speed presses.

ACM

AMERICAN COATING MILLS

ACM CARTONS — BOXBOARD

Division of Owens-Illinois Glass Company

General Offices, Board of Trade Bldg., Chicago 4, Illinois

Offices in Principal Cities

sales magic . . .

fisher's foils

FISHERS FOILS LTD · EXHIBITION GROUNDS · WEMBLEY · MIDDLESEX · ENGLAND

TELEPHONE WEMBLEY 6011 CABLES: TIOFNIT WEMBLEY (ABC CODE 6TH EDITION)

CAN WE HELP YOU WITH

DEFENSE CONTRACT PACKAGING?

We have equipment and experience for producing metal containers and components for defense packaging. Write for information and quotations or call your nearby Alcoa Sales Office.

Quality products deserve...

ALCOA CLOSURES

FORMERLY SOLD AS ALSECO SEALS

because only Alcoa Closures offer you all these:

Finger-tip opening without need for broken fingernails or shattered tempers.

Leakproof sealing assured with top and side seal.

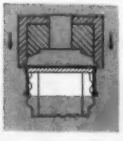
Guarded purity with Alcoa Aluminum, the metal that's friendly to food.

High-speed application with Alseco sealing machines. Speeds to 400 per minute.

Got a closure problem? Write for our free illustrated booklet.

Because rearmament needs come first, the supply of aluminum for closures is limited. For information on availability, please call your local Alcoa sales office, listed under "aluminum" in your classified telephone directory. Or write ALUMINUM COMPANY OF AMERICA, 1705E Gulf Building, Pittsburgh 19, Pennsylvania.

How Alcoa TopSide Closures are tailored to fit each bottle

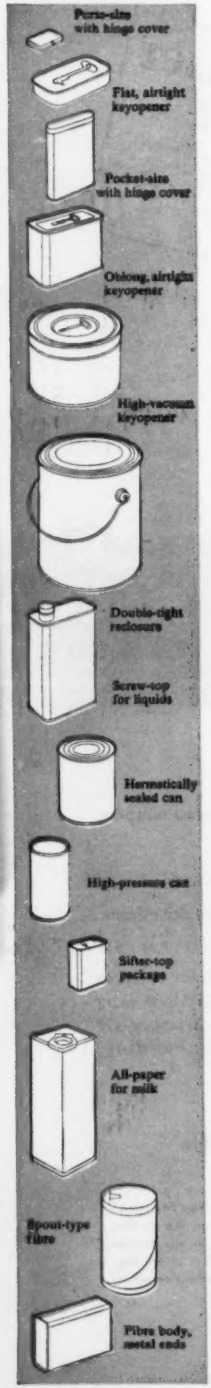


Controlled pressure secures cap on sealing surface, embedding bottle lip into cap liner, effecting top and side seal.

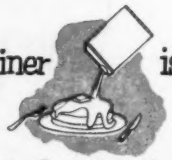
With the cap held down tightly on the bottle, rollers move in and roll on the threads of the cap, using bottle threads as a guide.

ALUMINUM COMPANY OF AMERICA • PITTSBURGH 19, PENNSYLVANIA

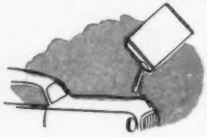
WHICH PACKAGE
SUITS YOUR PRODUCT?

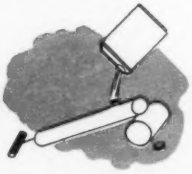


Did you know that...

This container  is used for Pancake Syrup

And also for Salad Oil 

 Not to mention Anti-Freeze

In addition to  Insecticides

It is also perfect for Auto and Furniture Polish 

While it makes the ideal package for Liquid Wax

And these are just a few of the many, many products which may be ideally packaged in this container!

And did you know that for each product special seam compounds were developed by our research staff?

Now, did you know that this is just one of *hundreds* of containers pioneered and developed by Canco for many different businesses in many different fields?

It is this 50-year experience in pioneering and developing which makes Canco the most versatile manufacturer in the industry.

Today, in these critical times, Canco's accumulated knowledge and resourcefulness will help its customers meet the unusual problems brought about by the national emergency.

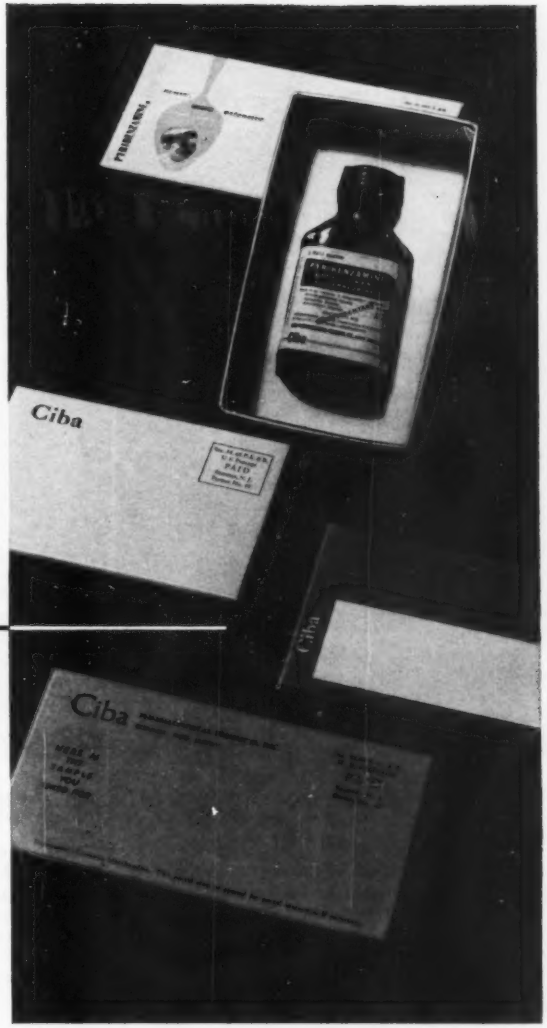
CANCO *Containers—to help people live better*

AMERICAN CAN COMPANY

NEW YORK • CHICAGO • SAN FRANCISCO • HAMILTON, CANADA

MAKE THE MAILMAN YOUR DEMONSTRATOR

... WITH MILLER BOXES



Sampling by mail is an old story to leading drug manufacturers like Ciba Pharmaceutical Products, Inc., of Summit, N.J.

A profitable story, too, as manufacturers in many other industries are discovering!

Rigid set-up paper boxes by Miller add substantially to the success of a sampling campaign. They're easy to load (thus keep labor costs down). They afford dependable protection in transit (thus assure favorable reception).

Whatever your needs in set-up paper boxes . . . for sampling, for adding sales-appeal, or for protective packaging of war material . . . find out now what Miller can do for you.

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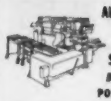
Designers and manufacturers of set-up paper boxes

For People On The Go

products in Plaxpak bottles are the answer to better living out of a suitcase. Almost as light as a puff of smoke, Plaxpak bottles help take the "lug" out of luggage. Unbreakable—they bounce but don't break—these amazing bottles are immune to the accidents and abuses of travel. They can be thrown or squashed into bags without fear or favor. No wonder products in Plaxpak bottles are applauded—and bought—by an ever growing number of travelers.

Only the best is

OTHER EMHART PRODUCTS INCLUDE:



AUTOMATIC PACKAGING EQUIPMENT

STANDARD-KNAPP

Division of Emhart Mfg. Co.

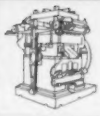
PORTLAND, CONNECTICUT

GLASS MAKING MACHINES

HARTFORD-EMPIRE CO.

Division of Emhart Mfg. Co.

HARTFORD 2, CONNECTICUT



HIGH SPEED AUTOMATIC PRESSES

HENRY & WRIGHT

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PREMIUM QUALITY STAMPING PRESSES

THE V & O PRESS CO.

Division of Emhart Mfg. Co.

HUDSON, NEW YORK

For Beautiful Hair Breck supplies three famous shampoos in Plaxpak bottles with a diamond point finish. Users like the bottle because it won't break; neither will it chip nor mar porcelain surfaces.

For Beautiful Hands girls find it wonderfully easy to apply World of Beauty Hand Lotion by Max Factor Hollywood. A squeeze of the Plaxpak bottle provides a controlled amount of lotion.

For After-Shave Comfort

men like the clean, masculine scent of Chessmen After Shave Powder. They also like the easy dispensing provided by the handsome, unbreakable Plaxpak bottle.

For New Economies in display packaging, Paris Box Co. is making transparent set-up boxes of Plax Polyflex*. Corners are formed without adhesives or heat-sealing. High strength of Polyflex* permits use of light gauges.

good enough

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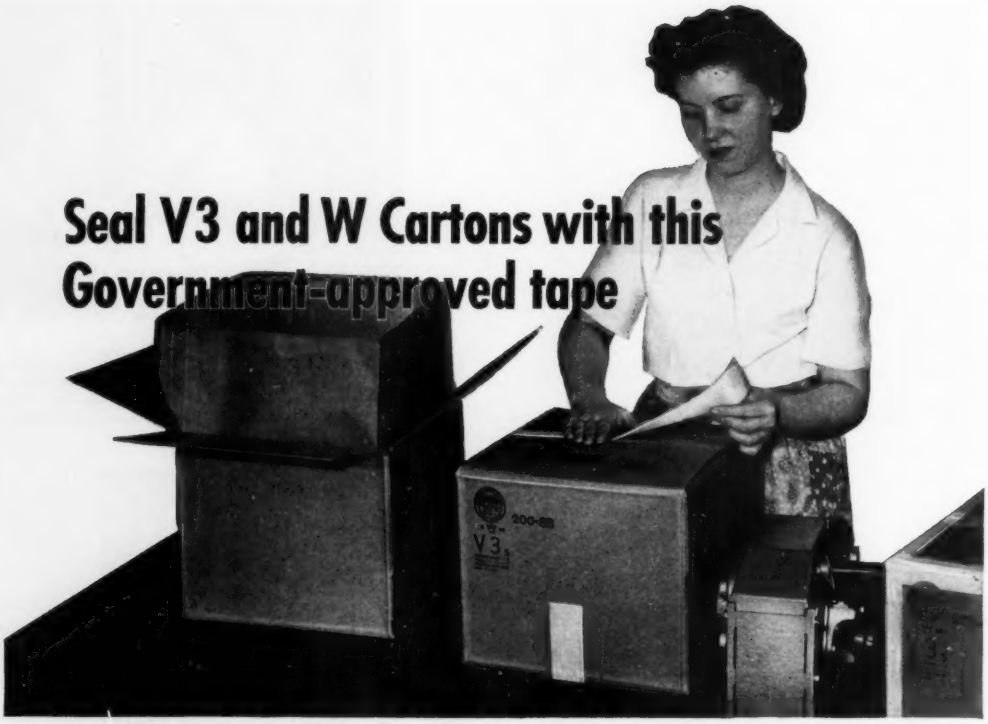
Seal V3 and W Cartons with this Government-approved tape



EASY TO HANDLE and apply, "SCOTCH" Acetate Fibre Tape No. 711 meets the requirements of Government Spec. No. JAN-P-127, Type 3 & 4, Grade B & C, for sealing of V3 Cartons and Government Spec. No. ANT-12A-T2, GA & B for sealing W cartons.

Meet rigid Government specifications for packaging by using "SCOTCH" Acetate Fibre Tape No. 711. This tough, water-resistant tape does a fast, dependable job of sealing both the innerliner and the outer seams of cartons. It withstands shocks and rough handling, sticks tight under all kinds of weather conditions . . . humid or dry, hot or freezing.

See your jobber for a supply of "SCOTCH" Acetate Fibre Tape No. 711. He can also show you rapid-action, easy-loading dispensers that speed up tape application.

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Can You Match Them Up?

SAN FRANCISCO
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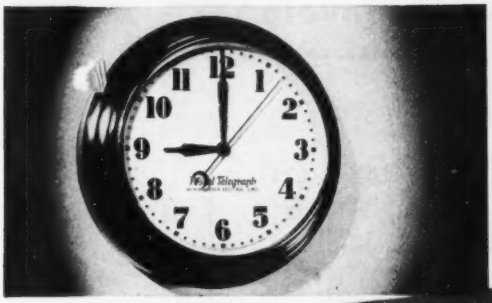
PARIS



Then it's lunch time in one of these cities, it's time for after dinner coffee in another. And to cities all over America a lot of the coffee that people enjoy is packed in Oneida Coffee Bags. There are good reasons why Oneida Bags are so popular with coffee packers from coast to coast.

Into each of these bags goes the famed Oneida skilled design. All printing is clear, sharply-focused—and hard to miss!

These bags square off like boxes when packed—thus making up into hard-hitting point-of-sale displays.

And they're engineered to give trouble-free performance on your automatic packaging equipment.

Yes, now's the time to switch to Oneida. And if the time is now 12 noon in New York, it's 9:00 A.M. in San Francisco, 7:00 P.M. in Cairo, 5:00 P.M. in Paris.

You'll want to see samples of Oneida Coffee Bags. So send for some today. And for any other free-flowing or semi-free-flowing product—remember—smart packers package in Oneida Bags.

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14 Clifton Boulevard, Clifton, New Jersey
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Converters and Color Printers of Bags, Envelopes, Sheets and Rolls from: Glassine, Cellophane, Pliofilm, Parchment, Polyethylene, Sulphite, Foil, Acetate, Kraft, Waxed, Coated and Laminated Grades . . . in Flat, Square, Automatic, Window Satchel-Bottom, Duplex, Embossed and Heat-Lok Styles.

Excello-Seal

protective barrier materials

rolls • bags • envelopes

The most complete line of barrier materials covering packaging specifications including—

JAN-P-131	**JAN-P-117**	**JAN-B-121**
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and combinations for Quartermaster subsistence packaging and famous HI-BINDER #50 Grade C, Type I

These various combinations of paper, vinyl film, aluminum foil, polyethylene, glass scrim, cloth, wax, heat seal coatings and other materials are available in roll form, and fabricated into bags, envelopes and pouches. Employing them in the proscribed manner will guarantee adherence to the designated government military packaging specification.

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CUSTOM LAMINATING AND COATING OF FILMS, PAPERS, FOILS AND FABRICS

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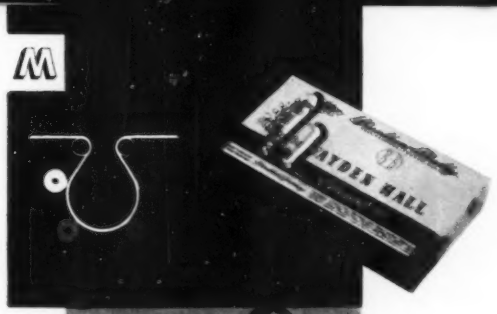

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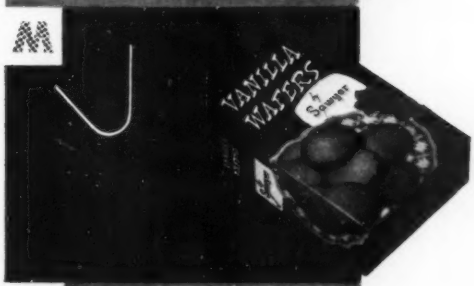

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Your Milprint man offers the widest choice of packaging printing methods. None of the old "take one kind of printing and like it" at Milprint. Your product, the packaging material to be used and cost factors are all considered to choose the *right* printing for your job. No matter which of the four major processes is finally selected, Milprint runs it *right* on presses modern as this minute.

Your Milprint man is well informed about Milprint's complete printing facilities . . . knows how to suggest which ones fit your job. That's another reason why it's just good business to call your Milprint man—first. His experience and counsel is yours without obligation.

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Milprint's tremendous production facilities and versatile operations are being widely used by many branches of the services for Military Packaging. The strategic location of 14 plants and the technical "know-how" of the Milprint organization are at your disposal. Write, wire or call Milprint regarding your Military Packaging problems.

This insert printed by Milprint, Inc.

Nashua Waxed Paper Gives You *100 cents for your Packaging Dollar!*

Brand sales step forward when the product protection qualities of Nashua waxed paper obtain the PLUS of Nashua's sharp, clear printing in multi-colors by rotogravure, aniline and letterpress. Nashua Self Sealing Waxed Paper is made by the most modern scientific process. Coatings of fully refined paraffin wax mixed with other ingredients in precise quantities produce *positive self sealing* with HARD SURFACE AND HIGH GLOSS. Result: packaging that catches the eye and invites the *sale* — product protection that insures the *resale!*

QUICK FACTS

- Prevents absorption of moisture which causes contamination by mold and bacteria.
- Prevents loss of moisture to confectionery and other products — prevents crystallization of sugar and salt.
- Prevents outside air from passing in or out of package — retaining product aroma, flavor and freshness.
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NASHUA
MAKES PAPER MAKE MONEY FOR YOU

VOLUME 24
NUMBER 9
MAY 1951

Modern packaging

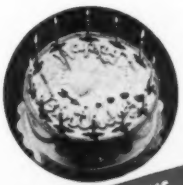
The gift market

IT'S BIGGER THAN YOU THINK: IT'S A YEAR-ROUND BUSINESS AND IT'S NOT JUST FOR 'FANCY STUFF.' WHAT ARE YOU GETTING OUT OF IT?

4,000,000 BABIES

2,000,000 BRIDES

35,000,000 ANNIVERSARIES



150,000,000 BIRTHDAYS

5,000,000 GRADUATES

Gift packaging, we believe, is often regarded too casually as just a matter of a few frills to dress up a product and capture a little extra seasonal business.

That's not so. In many product fields it's real business—year-round business. It's high time to analyze gift packaging in the cold light of vital statistics to get the proper perspective on these so-called frills in relation to the tremendous year-round market for gift sales. It is even more important to do so in times like the present when the supply of decorative packaging materials becomes uncertain, prices are high and some managements are all too apt to give gift packaging the brush-off as a non-essential part of merchandising programs.

Let's start with a simple thing like birthdays. Each year, come wars or revolutions, more than 150,000,000 people in the United States have birthdays. Assuming that each person gets at least one birthday present, the total approaches half a million birthday gifts purchased every single day.

Babies are being born at the rate of 4,000,000 a year and to assume that each one born receives just one baby gift is probably a gross underestimate. Add to this the shower and wedding gifts that will be given to 2,000,000 brides . . . the 35,000,000 couples observing wedding anniversaries . . . some 5,000,000 students graduating from schools, colleges, universities and professional institutions . . . plus Christmas presents, Easter presents, Valentine presents, bon voyage presents, hostess gifts, gifts to friends in hospitals, gifts for Mother's

Photo credits this page (counter clockwise): Johnson & Johnson, *Bride's Magazine* ©, Underwood & Underwood, Alladin Plastics, Inc., Columbia University.

Set-up box tricks

SPECIAL CONSTRUCTIONS provide new display interest and intrigue the shopper. The four Schiaparelli perfume bottles (upper photograph) rise to an easel angle when the lid is opened. The sectional hinged lid of the Evyan box (below) folds back to form a platform display base.

Day and Father's Day (there are 19,000,000 mothers and 19,000,000 fathers) and scores of other occasional remembrances exchanged by a nation of 150,000,000 individuals—and the total volume of merchandise purchased as gifts reaches astronomical proportions.

The demand for appropriate packaging of these billions of dollars worth of gifts is as deeply woven into American living habits today as the custom of gift giving itself. The gift packaging has become the determining factor in thousands of instances; it makes a shopper buy a particular box of candy, a particular combination of cosmetics, a certain make of a fountain pen, cigarette lighter or string of beads. Without a gift package presentation, other brands in the same product fields haven't a chance in this competitive market.

There's almost nothing we can think of that won't win added sales as gifts if packaging is used to give it that gift "look"—garden tools, kitchen utensils, workshop tools, even washing machines. Whether gift put-ups will add enough extra sales to be profitable on *your* product—whether gift packaging should be done the year-round, only seasonally, or not at all—depends on a study and testing of the market.

In those fields where the necessity for gift packaging has been universally accepted, competition grows keen. Tremendous activity has been seen during the last few years in the jewelry trade, which estimates that 90% of the $1,300,000,000 annual jewelry and silverware sales are accounted for by gifts. Fountain pens, mechanical pencils and cigarette lighters selling for over $5—75 to 85% of which are purchased as gifts—are almost universally packaged in beautiful presentation cases of metal, leatherette and plastic combinations.

Makers of household electrical appliances—a surprising 65% of which are estimated to be gift purchases—are now giving serious consideration to gift wraps. Most interesting is the current 1951 electric housewares gift campaign sponsored cooperatively by 25 members of the National Electrical Mfrs. Assn. to push all kinds of small electric appliances, from baby bottle warmers to toasters, as gifts. In making available window posters, pennants, etc., to 150,000 dealers—plus plugging the gift campaign in 250 national magazine advertisements—NEMA realized it would also have to make gift wrapping supplies available to dealers, if the campaign was to compete successfully in the gift field with other popular gift merchandise that is customarily gift wrapped. Accordingly, the group has arranged with Dennison Mfg. Co. to put up appropriate gift-wrapping kits which dealers may purchase to enable them to offer gift wrapping of any electrical houseware item.

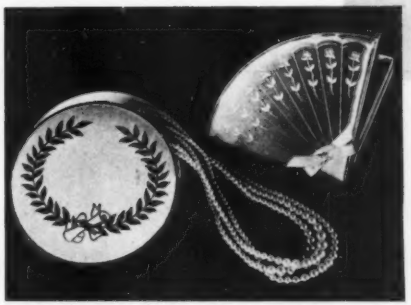
Gift packaging is essential to maximum sales of items such as hosiery and household linens which are not ordinarily classed as gift merchandise, but can be a handsome gift suggestion if properly presented in a gift package. The beautiful towel-set packages put out by Cannon, Martex and others are perfect examples; they run into millions of dollars of sales annually—sales which would probably otherwise have been missed. Only 15 to 20% of hosiery sales are estimated as being made expressly for gift giving, but many firms which produce luxury stockings are garnering additional business by presenting their merchandise in packages which attract the gift shopper. An excellent current example is the new satin case which Modeltex is offering with its "Fabulous 100" stockings.

The numerous decorative cartons adopted for wines and liquors during

STRIKING DESIGN of this gay green and red A & P candy box for 3- and 5-lb. quantities was planned for effectiveness in mass display. Gift appeal is unspoiled by brand name at top.

SATIN CASE is an integral part of the new gift package for Modeltex "Fabulous 100" luxury hosiery.

SHIRT SALES soared as the result of this Christmas gift box tied in with Marlboro's promotion based on the catchy theme, "Chim-e-ney Christmas . . . it's a shirt by Marlboro."



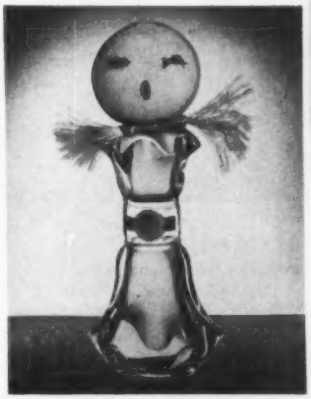
DELICATELY FEMININE are these handsome reuse boxes for Richelieu pearls, covered with satin-finish rayon fibre laminated to a paper backing. Fan-shaped box is for Mother's Day; round box with victory wreath and diploma is for graduation.

the last holiday season is further indication of the sales power of the gift package. The liquor industry has no accurate way of determining what proportion of packaged sales is for gifts, but it knows that sales jump fast during the few days before Christmas, indicating a rush of last-minute gift shoppers. The attractively designed gift carton, apparently, has a great deal to do with determining the brands that shoppers select.

Supply situation

Unhappily, users of gift-packaging supplies have for a decade now been harassed with uncertainty of supply. When the first tanks and planes went rolling off the lines in World War II, decorative packaging was drastically curtailed. Nothing like a normal supply was available until 1948-49. Then last year, when every user had reached a point where he could get all he wanted, another national emergency created new dislocations.

To make accurate predictions today is impossible. For the balance of this year, most users of decorative packaging report that they have been able to obtain required quantities of practically any desired material from existing inventories. The situation, however, is constantly changing. What is available today may be unobtainable tomorrow. Likewise, existing shortages can evaporate just as rapidly. The current situation of transparent films, for instance, may be eased by promised expanded production. Scare buying of paper seems to be subsiding, which should improve the paper situation. Most critical for a long time, probably, will be metals—steel, aluminum and brass—which are in high demand for the defense program. All packagers are well aware of these conditions and must continue to watch



TASSEL DETAIL becomes amusing part of whimsical package for Mavis cologne, with "head" of polystyrene foam. Tasseled cords may be prefabricated to any desired length for easy application.

Gift put-ups that sell more liquor

APPEARANCE of the gift carton for liquor is often a determining factor in selection of brands by the last-minute Christmas shopper. Some of last season's successes are: Chimney package which makes Glenmore's Old Thompson stand out from the crowd. Lord Calvert carton "For Men of Distinction" is a deep red velour printed in gold. Scotch theme is emphasized by tartan strip and thistle pin printed on Martin's V.V.O. package. Realistic effect of wicker basket enhances octagonal carton for Paul Jones.

CELLOPHANE wrappers, colorfully printed, with a clear area to reveal bottle labels are still another gay idea.

CONSTANTLY SEARCHING for designs with the greatest gift appeal and appropriateness, liquor firms have come up with these intriguing cartons: Modern treatment of gold and crimson on white gives richness to the Fleischmann package. Satchel-topped, gold-colored foil package takes the Bonded Beam carton out of the ordinary class. Third-dimensional effect of the die-cut window gives distinction to the Early Times carton. Famous parrot trademark provides a motif for Corby's blended whiskey carton.

trends in the current supply situation.

The best advice to users of gift packaging is to stay flexible, to design packages which can be quickly adapted to a variety of materials, depending on supply when required.

In some cases, for example, aluminum foil may be the preferred material, but surface design should be planned so that the package will be equally effective if the design has to be metallic printed on paper later on. Opaque packages can be designed to picture merchandise which ordinarily would show through a transparent package. It is also possible to design so that only a minimum of critical materials is used: a die-cut decorative spot of foil instead of an entire box covering, a small transparent window instead of a complete overwrap of transparent film.

Many clever design ideas can be modified to suit whatever materials are at hand. The high level of gift packaging maintained during the last war demonstrated that fact. There might not have been everything that users would have liked, but there was still a lot of gift packaging. The present situation is different. Over and above the huge military program, every industry is striving to continue business as near to normal as possible. In so far as gift packaging is a normal part of their activities, all companies

report that they will endeavor to increase it.

To obtain the maximum appeal of novelty, color effects and attractive construction in gift packaging demands the utmost in good taste and ingenuity. The best way to get ideas, to find out how to be different, is to examine successful packages already marketed. There is perhaps no other type of packaging in which individuality is so important, or in which the designer has such unlimited selection to adapt the hundreds of kinds of materials or containers to his purpose.

Set-up box trends

An interesting trend noted in recent collections is a revival of interest in the set-up box of unusual construction for the cosmetic and confectionery trades to provide more effective arrangement in display.

Schiaparelli, for example, puts a quartet of perfumes in a set-up box called "4 Fashions in Perfume." The inner platform is so secured and scored that when the hinged lid is opened the four bottles rise for display at an easel angle.

Parfum Evyan's new "Four Fragrance Surprise" is in a box which does similar duty, but in this case two hinged covers open back from the center of the box and may be folded under the box until they actually form a base platform to display the open contents.

Surface design of the set-up box also continues to be of utmost importance, particularly in the stationery and confectionery fields, to provide better mass display and bolder design treatment. The Great Atlantic & Pacific Tea Co., for example, last year used a special lithographed Christmas box wrap designed for its 3- and 5-lb. dark and milk chocolates. The box carried no trade identification on the cover—just a striking stylized motif of a snow-covered green Christmas-tree branch decorated with one large green tree ornament against a background of curving red and white stripes designed to attract instant attention. In the home, the box made a decorative piece by itself under the Christmas tree. It is planned to use the box again next Christmas with certain modifications to eliminate close-register printing.

Folding boxes

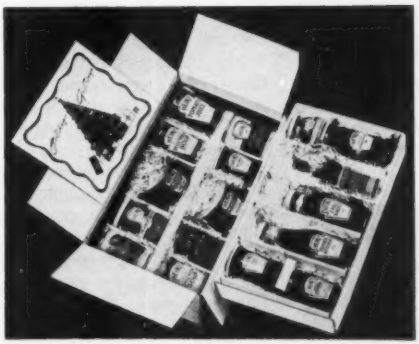
Wonders have been accomplished with the folding box as a decorative package in the last few years. One that attracted much attention early this year is a folder for Merry Hull gloves adopted by the Daniel Hays Co.

It is of simple tuck-end construction. Two die-cut flaps folded through a die-cut square close the package securely and provide a whimsical decorative touch by revealing a line drawing of a cherub as though peering through a tiny shuttered window. Size of the gloves contained is printed on the back of the "shutters." Trade identification and selling points of these "Finger Free" gloves are printed on the inside of the folder. The only other trade identification is the subtle printing of the Daniel Hays name integrated with the over-all design of cherubs. In this way, the trade identification does not detract from the gift appearance of the package.

Another unusual folding-box construction is a many-sided carton used by Gourielli for a bottle of "Moon-

Double-duty gift shippers

GIFT CHEESES become more welcome when packaged in a corrugated box like this one, depicting Paul Bunyan, the fabled lumberjack.



THE BUSINESS GIFT can be attractively presented in a corrugated container suitably decorated, as this H. J. Heinz assortment.

GOLD AND ORCHID printing on a shockproof corrugated container for an electric clock saves retailer the need of re-wrapping.

Decorative folding cartons

CLEVER construction permits infinite variety. Gourielli carton unfolds like the petals of a flower when the silken cord is untied.

ACETATE sleeve provides an efficient combination package for Matchabelli Potpourri liquid and solid cologne.

IDENTITY of Almond Roca tin is maintained on handsome gift carton showing full-color reproduction of holly against black.

light Mist" eau de parfum, tied together at the top with a blue cord. When untied, the four sides fold back like petals of a flower.

Prince Matchabelli has introduced two interesting ideas for carton packages. One is a traditional tuck-flap box for cologne to which is attached outside, tied on by ribbon, a tiny crown flacon of perfume in matching scent—a simple idea which could be adopted in other fields for a combination of related products. The other Matchabelli carton employs an acetate sleeve top to hold a vial of stick cologne.

Window cartons, particularly for toys and products with child appeal, are being used most successfully to create an impressive setting for the product. Daggett & Ramsdell's Easter package featured a sculptured soap rabbit and miniature green head of cabbage against a third dimensional farmyard scene inside the package. The die-cut opening in a box for Nosco's toy Amusement Park Scenic Railroad features the plastic train inside a die-cut window carton as though the train were moving through tunnels and past points of interest along its route.

POLYSTYRENE APPLE with reuse appeal as a salad bowl has been used successfully by fruit growers, bakers, confectioners.

Decorative corrugated packages

Many products demand the protection of corrugated packaging for shipment, but today the corrugated container may be surfaced and designed so that the shipping container serves as an attractive gift package as well. One example in this class is a telescope B-flute, 220-lb.-test, white-faced corrugated box which comes in two sizes designed for assortments of Wisconsin cheeses put out by Olde Chanticleer, Oconomowoc, Wis. The stylized design appeals to the eye and the imagination. It shows Paul Bunyan, the fabled lumberjack, hefting a round of cheese as Babe the Blue Ox looks on admiringly.

A corrugated gift shipping box for a Jefferson "Golden Hour" electric clock is covered with gilt-colored metallic ink, symbolizing the product's name and gold-plate finish. Orchid-ink printing completes the color theme of this package designed to relieve the retailer of supplying a separate gift wrap. The box is carefully engineered with interior pads to assure safe shipping.

The Cory Corp. makes wide use of corrugated shipping containers to solve the gift-packaging problem, including a colorfully printed one for an electric knife sharpener.

Many large food companies, which package assortments of their products suitable for gifts sent to business associates, employees and customers, have used the decorative corrugated box to good advantage. The H. J. Heinz Co. last year used a white-faced container with seasonal cover for packing a variety of holiday favorites. Each gift box carried a special window-type envelope on the outside in which the sender could insert the recipient's name on a greeting card. The carton was packed in two trays so that each product was effectively displayed.

Rigid transparent packages

The rigid transparent package, either molded or drawn from plastic sheeting, still has tremendous appeal for the gift packaging of many traditional lines such as cosmetics, confections, lingerie and a wide variety of novelties. Its use this year will be limited only by its availability. Interesting, however, is the broadening use of rigid transparent boxes for items like kitchen appliances. The Swing-A-Way Mfg. Co., last year put its can openers, ice crushers and knife sharpeners in molded plastic boxes. One of these was large enough to be re-used as a sturdy hat box, while the smaller one was suggested as a sewing box or a container for potted plants. And, of course, one of the classics in molded plastic packages with gift appeal is the Gillette Razor, which is the subject of this month's *Hall of Fame* story.*

Transparent polystyrene containers of unusual shapes are also effective for many kinds of gift packages, par-

* See p. 92, this issue.

APPROPRIATE SETTINGS for items with child appeal can be obtained by use of window cartons, as indicated by these two examples. Daggett & Ramsdell's "Peter Cottontail" Easter soap sculpture is visible against a three-dimensional farmyard scene. Die-cut opening in box for Nosco Plastics' toy railroad reveals the train as though in a scenic setting.

GLOVES, a traditional gift item, have not received enough attention in packaging. Valentine folder for Daniel Hays Merry Hull gloves has the size printed on back of amusing flap arrangement that provides a closure.

ticularly in the food field for cookies, cheeses and assortments of jams and jellies. The packages not only have novelty appeal on the counter, but have many re-use purposes that appeal to the recipient. A plastic bowl in the shape of an apple, for instance, was used most successfully last year by confectioners, bakers, fruit growers and dealers. Wrapped with cellophane, it provided an excellent display package with impulse appeal as a gift.

Lithographed metal containers are hardy perennials in the gift packaging of foods and cosmetics. This year's use and that for several years to come perhaps may depend upon what stock items can be found and adapted to various purposes. Stock containers of attractive design can always be individualized with ribbon or cord decorations, identified with applied labels or tags giving maker's name, etc. Fancy metal containers also are available from abroad, free of NPA restrictions.

Flexible wraps

Users of gift packaging should not overlook the infinite possibilities of flexible wrappings which, with proper printing, can be protective as well as decorative. Holiday hams, poultry, fruit cakes, plum puddings, certain types of soft goods like shirts and men's sportswear can be effectively packaged in flexible wrappings. Leading meat packers usually present hams during holiday seasons in the gayest of wrappers. Some have appeared in brilliant foil-laminated wraps as well as in cellophane, Pliofilm and polyethylene.

More effective methods of printing on polyethylene, permitting attractive decorative treatment, are widening the use of this film for gift packaging. Last year the BVD Co. merchandised men's pajamas in polyethylene bags with suitable holiday decoration and with the suggestion that the bag could be washed and re-used as a refrigerator food bag or for other household purposes later.

Several liquor firms used brightly colored cellophane wrappers rather than folding cartons last year as their holiday gift packaging. Two brands so packaged were PM de Luxe and Mount Vernon Blended Whiskey. The wrappers were made with die-cut holes so that the brand label on the bottles showed through for identity.

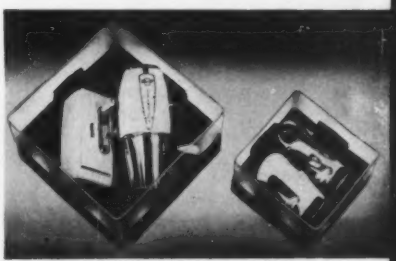
Of course, with the present severe shortage of cellophane, there is little chance at the moment to broaden its use in gift packaging. But with the prospect of increased supplies within the next year or so, cellophane should not be omitted from forward planning.

Always there is available for gift packaging a wide variety of stock decorative papers, and users, particularly this year when prices of trademarked items are expensive and harder to get, should investigate carefully the possibility of using these stock designs. Paper converters in the past few years have made a concentrated effort to restyle their stock lines to give the customer the latest assortments of color and design themes; some will make certain patterns available to only one customer in a city or to one user in a certain industry, which preserves a certain amount of exclusivity. These papers are not only excellent for loose wraps, but are the backbone of thousands of box wraps that lend beauty and color to the specialty gift package.

More attention should be given to

(This article continued on page 180)

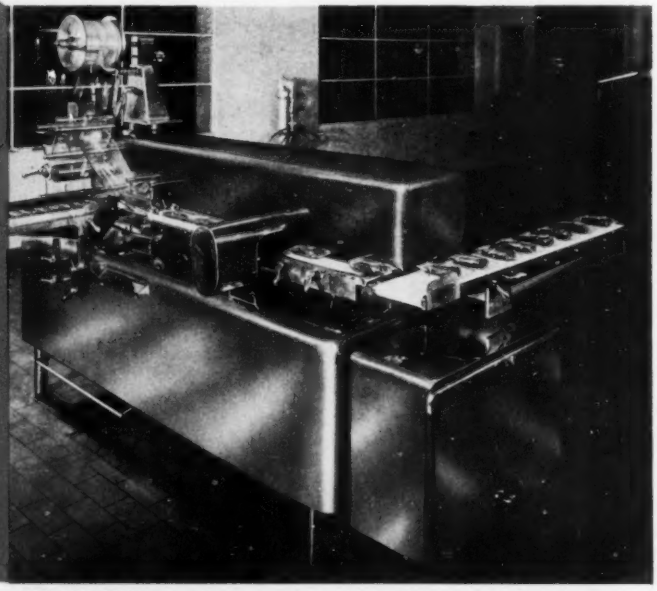
METAL CONTAINERS may be scarce, but certain stock items, like this Easter package, can be put to many uses if obtainable.



RIGID TRANSPARENT BOXES have ever-increasing uses. Swing-A-Way Mfg. Co. used them last year for such kitchen aids as knife sharpeners, ice crushers, can openers and other products.

STICK and ALL

COMPLETELY SEALED, these colorful packages now meet requirements of all health authorities. Packaging costs are lower and sales went up 30 to [illegible]%.



OVER-ALL VIEW of packaging machine. Adapted from a candy-bar wrapper to meet the special requirements of ice-cream-on-a-stick, the machine is handsomely finished in stainless steel. All working parts of the unit are enclosed and it is especially designed for ease of cleaning.

While the stick in ice-cream novelty items meant easier handling for the consumer, it was a headache from the packaging angle. The ice-cream stick for a long time defied packaging invention. Wrapping the bar itself was no great problem, but how to enclose the stick within the wrap and come up with a completely sealed, sanitary package was a sticker that only recently has been solved.

Up to now, ice-cream stick novelties have been just about the only dairy products not completely sealed. Health authorities and ice-cream processors were pressed for a solution to their problem of complete product protection from producer to consumer. Then designers tackled a candy-wrapping machine, modified it to meet the more rigid dairy sanitary requirements—and that solved the packaging problem.

Hage's, Ltd., San Diego, Calif., is one of the first ice-cream manufacturers in the nation to use this wrapping machine.

That company, which markets a bar without a stick besides four additional stick-type novelties (one of which is a water-ice product with twin sticks), reports that the new, completely sealed cellophane wrap has upped individual sales of these items 30 to 100%.

Hage's attributes these increases not only to the crisp, sanitary appearance of the wrap, but also to the use of cellophane, allowing customers for the first time a really good view of the contents of the package before buying.

The new wrapping machine not only wraps and seals both ends of the package, including the stick, but accomplishes with one operator the same output which formerly would require three or more.

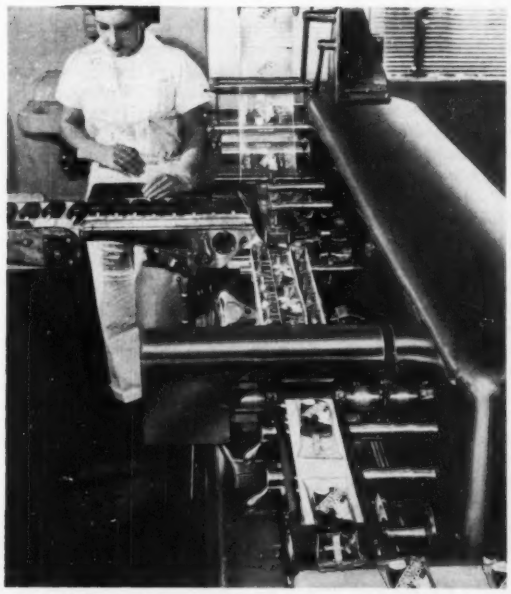
Actually, in the trade, machine wrapping of ice cream itself was long thought to be an impractical matter, considering the fragile nature of the product.

Th's new wrapping machine, which packages up to 150 ice-cream novelties a minute (from 600 to 750 doz. an hour), minimizes the time in which the ice-cream bar is exposed to room temperature. It requires less than two minutes for bars to be wrapped, packed in cartons and returned to the "sharp" room at minus 20 deg. F.

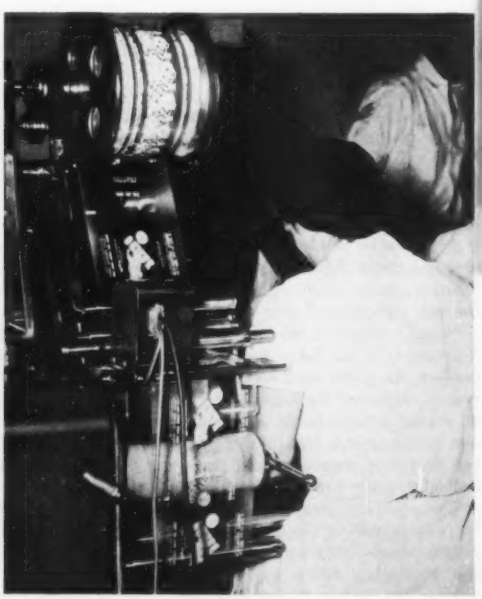
In operation, both ice-cream stick novelties and stickless bars, produced on an automatic electric spur plate stripper, proceed from the process line to the stainless steel, sanitary wrapping machine. Unlike the candy-wrapping model, this machine has

HAGE'S DEMONSTRATES A NEW MACHINE THAT AUTOMATICALLY WRAPS

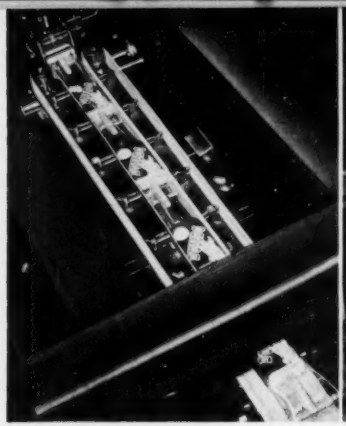
AND SANITARILY SEALS ICE-CREAM-STICK BARS IN PRINTED CELLOPHANE



BARS ENTER the wrapper directly from the freezer, are gently enclosed in heat-sealed tube of cellophane, which is then cut off by electronic controls and the ends sealed. Speed of the wrapping machine is up to 150 bars per minute.



WEB FEED of cellophane is controlled by an electric eye for proper cut-off between the ice-cream bars after the tube is formed. One roll of cellophane will wrap 600 doz. bars—usually enough for an hour's production.



HIGH SPEED of the operation is achieved despite the gentle action of tube forming and cut-off. The ice cream is out of the freezer in only two mintues.

AT DISCHARGE BELT, the operator packs the ice-cream bars 1 doz. to a carton before returning them to deep-freeze cold-storage room.

been modified for dairy-product use by stainless-steel construction and by enclosure of all working parts.

Stick bars are fed into the machine by a single operator. In feeding the machine, sticks are pointed all in one direction, away from the operator. A conveyor belt then carries the bars into the wrapping section of the machine.

The machine is fed by a reel which can dispense cellophane, glassine, waxed paper or other packaging materials. Rolls usually hold enough wrap for an hour's production—in the case of Hage's, enough for 600 doz. ice-cream wraps.

Hage's is currently using two types of gravure-printed cellophane: 300 MSAT cellophane is used for stick novelties; 450 MSAT for stickless ice-cream bars which must take rougher handling treatment when this product is dispensed by vending machines. At present, about 50% of the stickless bars are sold by machine, the balance through conventional channels.

Hage's cellophane roll widths vary from 6¼ to 7 in., depending on the product size. The continuous roll is printed with register indices, or cut-off marks, which actuate an electric-eye device so that the printed package design is always centered longitudinally on the bar.

The compact wrapping machine takes up only 32 sq. ft. of floor space, weighs about 3,000 lbs. and is powered by a ½-h.p. motor.

From the feed-in endless belt, ice-cream novelties proceed until they are carried onto the machine line at right angles to the feed-in belt. They then enter a former, which forms the cellophane into a continuous tube around the ice-cream bars, with a single ⅛- to ⅜-in. lap seam along the bottom. The bars, enclosed within the rectangular cellophane tube, continue to the next station of the machine, where the tube passes over a heat sealer. The sealed but uncut-uncrimped tube moves down the line to an end-sealing and crimping station, where a rotary, heated combination crimper-and-knife seals and cuts off the wrap into bar-sized packages. During this process, which is carefully registered and synchronized by the electric-eye device, both ends are heat sealed and crimped. A continuous stream of bars moves from the tube-forming process through the cut-off station in straight-line operation sequence.

After crimping and sealing, the bars move again at right angles to the machine by conveyor to the packing station, where an operator gathers four bars at a time, packs them one dozen to the carton and, as a carton is filled, sends it along another conveyor for carton sealing and labeling and, finally, into the cold-storage room.

The entire process, from the time the ice-cream bars first enter the machine until they arrive at the storage rooms completely packaged for shipment, takes but two minutes.

The wrapping process for stickless bars is identical, the only difference being the positioning of the wrap design around the bar.

Hage's will shortly increase the mechanization of its operations even further by the installation of additional conveyors which will carry the bars from the ice-cream processing section directly to the feed-in operator.

Until this machine was installed and put into operation at Hage's, ice-cream novelty bars were hand bagged in glassine. Hage's has found that completely sealing the bars in cellophane has decreased ice-cream returns, has effected 100% sanitation and, with the product visible through the cellophane, has upped sales remarkably.

Another feature of the packaging machine, besides its stainless-steel construction, is its design so that all parts which are in contact with the ice-cream product are easily removable for cleaning.

The development of this complete-sealing line came, according to ice-cream industry authorities, in the nick of time. Recent regulations by health authorities have made completely sealed packages a mandatory requirement in certain sections of the country.

The colorful design of Hage's cellophane bar wraps, rotogravure printed in two colors, has likewise had a lot to do with increased sales. The design for Hage's "Dumbo," 5-cent ice-milk, chocolate-covered stick bar, has a friendly elephant imprinted in white and outlined in maroon on both sides of the package. "Fudgi-Frost," another ice-milk product, has a red and yellow "Donald Duck" wrap. The name is printed in red on a yellow background; "Donald Duck" is yellow on a red background. The "Kreami-Frost" wrap uses a dark blue and white design. "Crispy Bar," the stickless novelty—and Hage's only 10-cent bar—is printed in yellow and orange. A fifth product, "Icy-Frost Twins," is a two-stick water-ice bar and employs the Donald Duck design in blue and yellow.

The product itself becomes the package's third color with all these transparent wraps.

In addition to the juvenile appeal created with Disney-character designs, wrappers carry notice of premium offers and young customers are urged to save wrappers for "prizes and valuable gifts."

CREDITS: *Wrapping machine, Campbell wrapper 2W-7, Hudson-Sharp Machine Co., Green Bay, Wis. Cellophane wrappers, Shellmar Products Corp., Mt. Vernon, Ohio (from South Gate, Calif., plant).*

FILLED DRUM retains its shape without appreciable distortion. Empty, it can be completely collapsed for return shipment and re-use. It requires no vents for filling or emptying.

Collapsible drum

FLEXIBLE RUBBER-FABRIC CONTAINER IS TOUGH, LIGHT WEIGHT

AND CAN BE DEFLATED LIKE A BALLOON FOR ECONOMICAL RETURN SHIPMENT

A brand-new idea in drums—a non-rigid synthetic rubber-fabric container holding 55 gals., which may be collapsed for return and re-use—has attracted several users in the petroleum and liquid-chemical fields, and may have widespread usefulness in the current metal shortage if the materials from which it is made do not prove to be shorter than steel itself. It is currently being produced only in limited quantities and at this stage, of course, the drums are more expensive than steel.

The drum was not, however, developed as a substitute; it has several interesting features.

Principle advantages claimed are (1) the collapsible space-saving feature, (2) light weight which permits substantial savings in shipping costs and (3) ability to absorb punishment that would destroy or damage a metal or fibre drum. It is estimated that more than 2,500 collapsed drums can be shipped in a standard railroad boxcar that would hold only 300 rigid drums, and an empty 55-gal. synthetic rubber-fabric drum weighs less than 30 lbs.

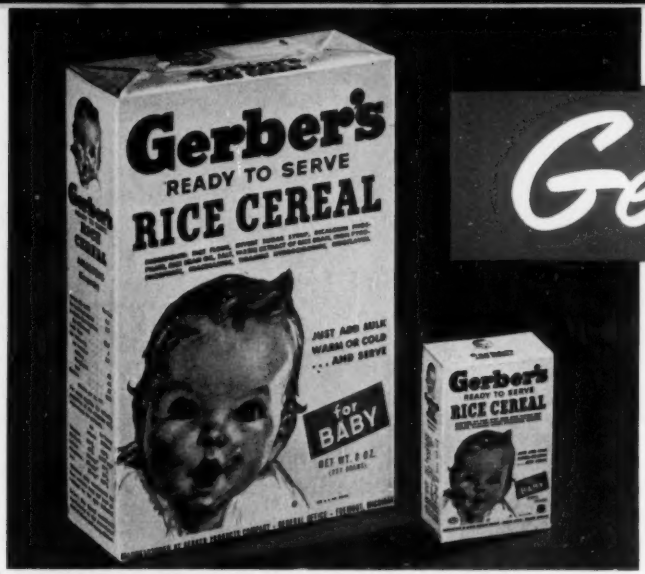
Experimental tests have indicated that the new drums will be suitable for the shipment of oils, greases, fats, acids, paints, emulsions, soaps, dry powders and a variety of pharmaceutical and industrial chemicals. They are also being tested for the practical transporting of liquids by air for military purposes and for dropping liquids by means of parachute to ground troops.

The container is comprised of a strong, low-stretch cotton textile material impregnated with synthetic rubber and molded in one piece. The result is a tough, flexible container approximating the size of a standard barrel or rigid drum. The new collapsible drums are equipped with effective fittings for filling, emptying, lifting and handling.

The result of three years' development work, the new drum is reported to be easy to lift, roll, handle and stow. The material is non-corrosive, non-absorbent and resistant to weathering. When full, the drums retain their shape without appreciable distortion.

The container has been submitted to the ICC for approval and is considered to have certain safety advantages, since it needs no venting while being filled or emptied and therefore will, it is believed, eliminate hazards sometimes encountered in handling certain acids and liquid combustibles. Liquids that oxidize, for instance, can be withheld from exposure to air during removal from the synthetic rubber-fabric drum. Inner surfaces have no corner pockets, so that liquid contents may be completely removed and the inside readily cleaned for re-use.

CREDIT: *Drum made by United States Rubber Co., New York, using the company's "Ustex" cord fabric.*



SAMPLES look like the regular sales packages in all but their size.

Success of the $180,000,000 baby-food business is largely attributable to continuous sampling to new mothers. Such samples sent out by leading companies run into millions of packages a year.

Some firms use standard-size sales packages for the sample, but in the case of baby-cereal products this procedure is not only expensive, but cuts into sales volume, because the full-sized package provides such a large quantity for free that mothers do not have to make a purchase sometimes for several weeks after they have received it.

A suitable package form for small-size sampling and a production set-up for handling it economically at high speed are, therefore, absolute essentials to successful merchandising in this field.

The Gerber Baby Foods company, Fremont, Mich., had for some time been using small envelopes, each containing a trial quantity of its baby cereals, but the company was not satisfied with this packaging. It was difficult to seal the paper envelopes to eliminate troublesome sifting that made the samples look untidy. While the envelopes were color printed to resemble the face of the carton, showing the famous Gerber baby, they did not actually duplicate the sales package because they were flat. It was also felt that they did not have a sufficiently attractive appearance to create the proper acceptance when sent as a mailer to mothers.

The company is now marketing four baby cereals produced from four different grains to meet requirements for allergic disturbances to which certain babies are subject and is mailing a sample of each to mothers. This demanded a method for packaging one each of the four cereals in a single mailing unit.

About a year ago management began planning a completely new sampling procedure. The result is an efficient new unit comprised of four miniature ½-oz. cartons of the cereals—enough in each for just two or three servings for a small baby—each duplicating the sales package in design and color: red background for the oatmeal cereal, yellow for barley, blue for wheat and ivory color for the new rice cereal. The four cartons are automatically wrapped together with a paperboard backer and labeled ready for mailing.

This new sampling unit, which the company is turning out at the rate of about 15,000 a day, will be sent to a list of nearly 3,000,000 new mothers a year. To produce this quantity required the installation of a completely new production line.

The four cartons are set up, filled and sealed on automatic cartoning machinery at the rate of 110 per minute. One machine, similar to the type used for filling small cartons of raisins, is used for running all four types of cereals, during specified periods. The filled individual cartons are transferred from the filling machine to the wrap-

Semi-automatic line

INDIVIDUAL PACKAGES of four types of baby cereals are loaded into four hoppers on filling floor. Filled cartons are transferred from the filling machine to the wrapping floor below through four chutes.

miniatures

EFFECTIVENESS OF BABY-FOOD SAMPLING JUSTIFIES HIGH-SPEED LINE FOR PACKAGES THAT ARE TINY REPLICAS OF SALES SIZES

SOME 3,000,000 new mothers will receive these efficiently produced sample packages of the four baby cereals in a year. Wrapped together, with a paperboard backer and labeled, the unit makes a sturdy mailer.

ping floor through four chutes where they are received by four operators who load them by hand onto four lanes of an endless belt conveyor which carries them to a pusher which moves them, four abreast, into the pocket of the wrapping machine. Midway between the pusher and the folding head, an operator places promotional inserts on top of the cartons so that these are wrapped and sealed in the package with the four tiny cartons of cereals. The wrapping machine is of standard design, but with certain specialized features added to make the assembling job easier.

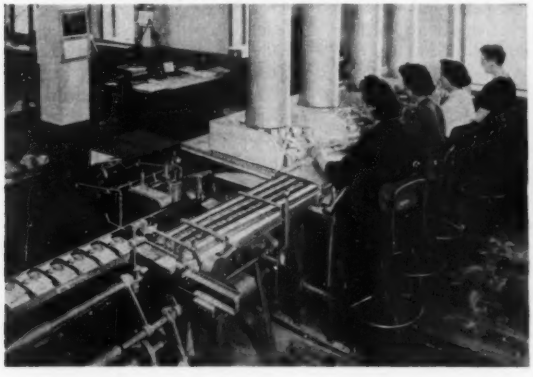
The wrapped packages are then led to a labeler which applies preaddressed labels. Present production rates are about 60 packages per minute. At present the wrapper is a 35-lb. white sulphite stock. The chief difficulty experienced in the installation, under current material shortages, was that of obtaining a paper of sufficient strength to give efficient performance for mailing.

Eventually, since this project represents a continuous sampling operation, the installation may be converted to completely automatic straight-line production, thereby eliminating the necessity of transporting the cartons from the filling to the wrapping floor. Further automatic devices may also be added for putting the inserts in the package.

CREDITS: *Wrapping machine, Lynch Corp., Packaging Machine Div., Toledo, Ohio. Cartoner, Pneumatic Scale Corp., Ltd., Quincy, Mass. Cartons, Michigan Carton Co., Battle Creek, Mich. Wrappers, Quimby-Walstrom Paper Co., Grand Rapids, Mich. Inserts, Dickinson Bros., Grand Rapids, Mich. Labels, Ainsley Lithograph Co., Chicago.*

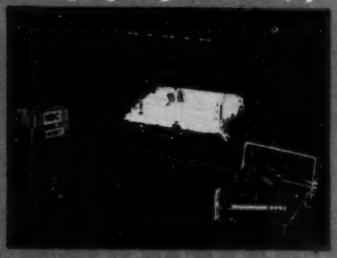
produces 15,000 samples per day

FOUR OPERATORS place the packages on a four-lane endless belt conveyor which carries them to a pusher. The pusher moves them, four abreast, into the pocket of the wrapping machine.



PROMOTIONAL INSERTS put on top of cartons are wrapped in packages, which are then labeled. Wrapped samples go to the Post Office in shipping cartons.

Packaging's Hall of Fame



TWENTY-NINTH OF A SERIES

Gillette

RAZORS AND BLADES

The only man in history, ancient or modern, it has been said, whose picture and autograph have appeared in every city and town of every country in the world is King C. Gillette, inventor of the Gillette safety razor and double-edged blade. The vehicle for this impressive *tour de force* is the familiar Gillette razor-blade wrapper and carton, which for nearly half a century have used King Gillette's picture and autograph as a trademark.

While retaining this link with the side-whiskered past, Gillette has sponsored such modern ideas as today's convenient plastic dispenser package for blades—an idea which swept the blade industry after Gillette introduced it in 1947. To date, Gillette has used "tens of millions" of the dispenser cases, making it possibly the biggest volume molded plastic package ever marketed.

The Gillette Co. long has been unchallenged as the largest seller of both blades and razors. In 1903, the first year of actual operations, sales totaled $269. In 1950 sales (including those for Gillette's Toni Division) topped $100 million.

In 1903 a Gillette razor and a dozen blades cost $5. Blades were $1 a dozen. Today, for 98 cents you can get 20 Blue Blades "with the sharpest edges ever honed" in the handy plastic dispenser and the razor is practically given away; for a dollar you can get a vastly improved one-piece razor in a sparkling red and crystal polystyrene case, *plus* a 10-blade dispenser.

Gillette's great idea, for which he gets undisputed credit, was the disposable blade—so cheap that it could be used a few times and thrown away. He also invented the safety razor that could use a double-edged blade—getting double mileage from the same piece of steel.

Protected by basic patents during the first 17 years of its history, the company stood alone in the development of double-edged blades—also in the development of packaging methods that made possible world-wide distribution. More than three billion Gillette blades were shipped in 1950 by the company's home plant in Boston and various foreign branches. No other blade or razor comes even close to Gillette's volume.

From their inception, Gillette's razors and blades were intimately associated with the idea of a *packaged shave*. The company pioneered in developing the principles of protective packaging for razor blades. It helped design and in many instances invented the machinery for high-speed automatic wrapping, cartoning and dispenser-filling of razor blades. Packaging that protects and helps sell the product, plus a continuous flow of convenience features, have always been a cornerstone in Gillette operations. These *firsts* on which Gillette's nomination to *Packaging's Hall of Fame* is based, cannot be seriously challenged.

From the beginning Gillette razors were packaged in handsome, durable, re-use presentation boxes. No packager has a more impressive record in the use of such containers to glamourize and help sell a "hardware" product. No company has a greater appreciation of the value of a package. It has been estimated by outsiders who know the costs of such things that Gillette probably doesn't make a nickel on its famous $1 plastic case containing the razor and 10 blades; apparently it is enough for the company to get that razor into use and thus sustain the market for blades.

EARLIEST PACKAGE still extant is this time-worn 1906 razor case which even then provided a compartment for disposal of used blades. Shown with it is the green "banknote" design of blade carton and wrapper that early established the Gillette identity.

Sales and advertising

Backing up the packages is an unusually strong and consistent advertising campaign. In addition to large expenditures in the usual mass-market media of newspapers, magazines, billboards and point-of-sale aids, Gillette has established itself as the premier broadcaster of America's major sporting events—by the simple expedient of outbidding other advertisers for the privilege of sponsoring radiocasts and telecasts of such classics as the World Series, the Kentucky Derby and the championship prize fights.

Gillette figures that at such times it holds the entire American market for

NOMINATED FOR PACKAGING'S HALL OF FAME BECAUSE:

- **Inventor of the packaged shave, Gillette has consistently led in package features that have kept it the world's top seller.**
- **Its packaging line is a notable example of high-speed automatic handling of a difficult product.**
- **Master of the art of presentation packaging for razors, it also pioneered the functional plastic dispenser for blades.**
- **Promotion in support of the package hits the bull's-eye of the male mass market.**

razors and blades right in the palm of its hand and it is worth close to $1,000,000 (the record sum paid for the radio and television rights to the 1950 World Series games and the All-Star baseball game) to be able to ring that bell every few minutes and remind possibly 50,000,000 men to "Look sharp! Feel sharp! Be sharp!" with Gillette razors and blades.

Gillette was quick to see the possibilities of television in conveying a visual impression of the package. The commercial interludes in its telecasts usually are film sequences in which some shaver, young or old, discovers the Gillette razor and blade and is pleasantly astonished to find that all this shaving satisfaction can be obtained in the handy plastic case (close-up) for just $1.

The World Series has been broadcast by Gillette since 1939 and telecast since 1947. The company sponsors the Army-Navy, the Rose, Orange and Sugar Bowl football classics. Also carried on its famous Cavalcade of Sports is the Triple Crown of Racing—the Kentucky Derby, The Preakness and the Belmont. Gillette broadcasts and telecasts weekly headline boxing bouts from Madison Square Garden and telecasts, as well, many fights of national importance. A view of the telecasting of one of these Madison Square Garden fights is the subject of MODERN PACKAGING's cover illustration this month.

The company's astute policy of getting its razors into use—knowing that every razor needs blades—has, of course, been the key to its merchandising success.

Early in World War I, King Gillette, who had blown the lid off many board meetings with his sales-getting bombshells, exploded a new idea. "Let's give a Gillette razor and a package of blades to every man in the services!" he proposed.

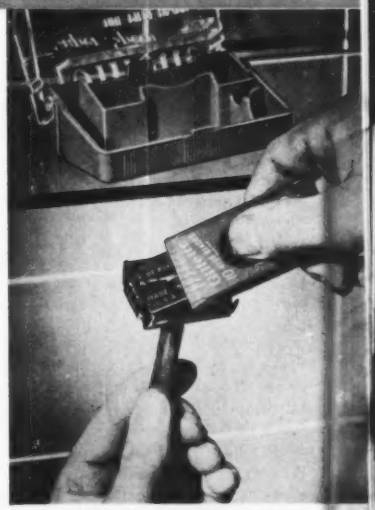
An excellent idea, the board members agreed, but even better—why not sell them to the Government at cost? Gillette did just that. This knack of seizing every promotional opportunity has always been characteristic of Gillette methods.

History repeated itself in World War II, when practically every GI received a Gillette razor and a package of Thin Gillette Blades in a handy flat case as part of his Government issue. During and following both wars, Gillette sales skyrocketed.

How it began

The origin of the throwaway safety-razor blade has a curious connection with the packaging field.

King C. Gillette was a traveling salesman for the Baltimore Seal Co.,



HANDY DISPENSER of plastic that makes it unnecessary to touch blade is latest innovation.

TODAY'S PACKAGES are linked with the past by their famous trademarks—King C. Gillette's picture and autograph. The Thin Blades, which is Gillette's economy line, employ a modern design in red, black and white.

INSIDE the dispenser is a spring of thin metal. Over it a paperboard insert is placed, then the blades, which are loaded alternately over either center guide bar to prevent two blades from being discharged at a time.

CONVENIENCE is the keynote of the dispenser and its carton. A slit in the carton and its cellophane wrap permits easy opening. Used blades are safely disposed of in the back compartment of case.

predecessor of today's Crown Cork & Seal Co., in the 1890s when he conceived the idea. Although a successful drummer, he had, as he has said, "an impulse to think and invent."

His close friend and confidant was William Painter, the inventor of the crown cap. In memoirs which were written in 1918 Mr. Gillette recalls a conversation in which Mr. Painter said to him: "King, you are always thinking and inventing something. Why don't you try to think of something like the crown cap? When once used it is thrown away and the customer keeps coming back for more."

This advice haunted Mr. Gillette. He applied the thought to nearly every material need, without a real inspiration. Then:

"One particular morning," he says, "when I started to shave I found my straight razor dull. It was not only dull, but beyond the point of successful stropping. It needed honing, for which it must be taken to a barber or cutler. As I stood before the mirror that morning, the Gillette razor was born. At that moment, it seemed as though I could see how the blade could be held in the holder; then came the idea of sharpening two opposite edges on a wafer of steel."

Years of discouragement followed, but finally, through friends, his idea came to the attention of William E. Nickerson, a very successful engineer living in Boston, where Gillette was residing. Mr. Nickerson, who later became a director in the company, solved the technical problems and designed the processes and machinery that made production practicable. The company was incorporated Sept. 28, 1901, and $5,000 in capital was received through the sale of stock. King Gillette became the head of the company, a position he held until shortly before his death in 1932.

Early packages

Gillette's first ad appearing in October, 1903, showed an illustration of a leather-covered wooden box with hinged lid, containing a razor and blades. Two paperboard cartons, each with one end open, were included—one containing new blades, the other for discards.

In 1909 an addition to the packaging line was an all-metal pocket case made in gold, silver or gunmetal finish—plain polished or richly engraved. By this time the blades were packed in a metal case with a telescoping slip-on lid. Stamped-in thumb catches on the lid made the blade case easy to open. Emphasis on smart presentation and greater convenience won rapid consumer approval.

Thanks to more than a hundred packaging-style changes and improvements for convenience and better appearance, Gillette razors have always carried the promise of comfort and convenience.

Frequent design changes in the razor, culminating in today's convenient one-piece style, have combined with frequent new packages to help draw more shavers into the Gillette fold.

Blade packaging

A blade edge has only to touch paper, metal or any other material and part of the sharpness is lost. Unless protected against exposure to moisture, the blade is subject to corrosion.

The razor blade, of course, has always been a difficult article for the user to handle and dispose of.

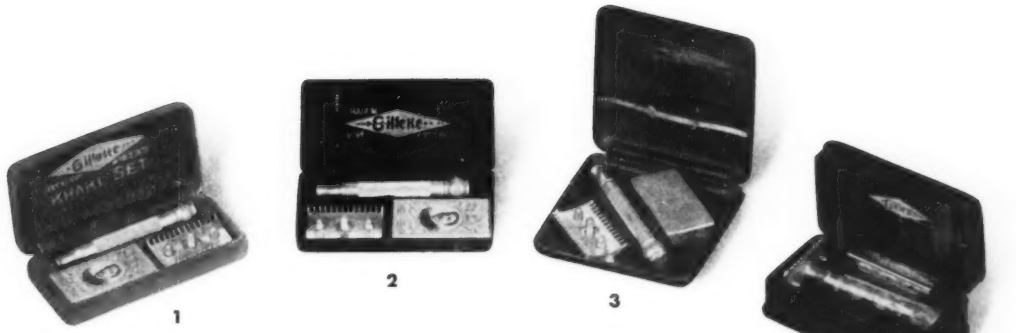
Through the years, increasing demand has arisen for automatic handling of razor blades at high speed. This in turn has resulted in a need for packaging materials of absolute precision specifications and high uniformity. To meet these requirements, both Gillette and its suppliers have been pressed into carrying on ever more detailed research to establish and maintain needed tolerances.

The story is told that Mr. Gillette had been discussing the potential market for his blades with a group of friends and one of them said, half jokingly: "King, if your product is going to be as valuable and popular as you claim, it will become as well known as a dollar bill. Maybe you ought to put your picture and signature on every package."

Mr. Gillette took the idea seriously, realizing that a design similar to that on a dollar bill would denote value, would be pleasing to men and would provide superior brand identification. Accordingly, the outer wrappers and cartons were printed with an all-over green banknote design. Gillette's picture appeared in an oval frame and beneath his picture was a facsimile autograph.

The package design provided more than hard-to-imitate brand identity. In foreign distribution, which grew to be enormous, it sidestepped all language barriers. Hans, Jacques, Ivan or Chang might not be able to read English, but they can identify Gillette's picture and signature, and consequently his products. Brand identity, too, was the keystone of the tremendous advertising program.

Also of high value in the company's packaging-merchandising success was

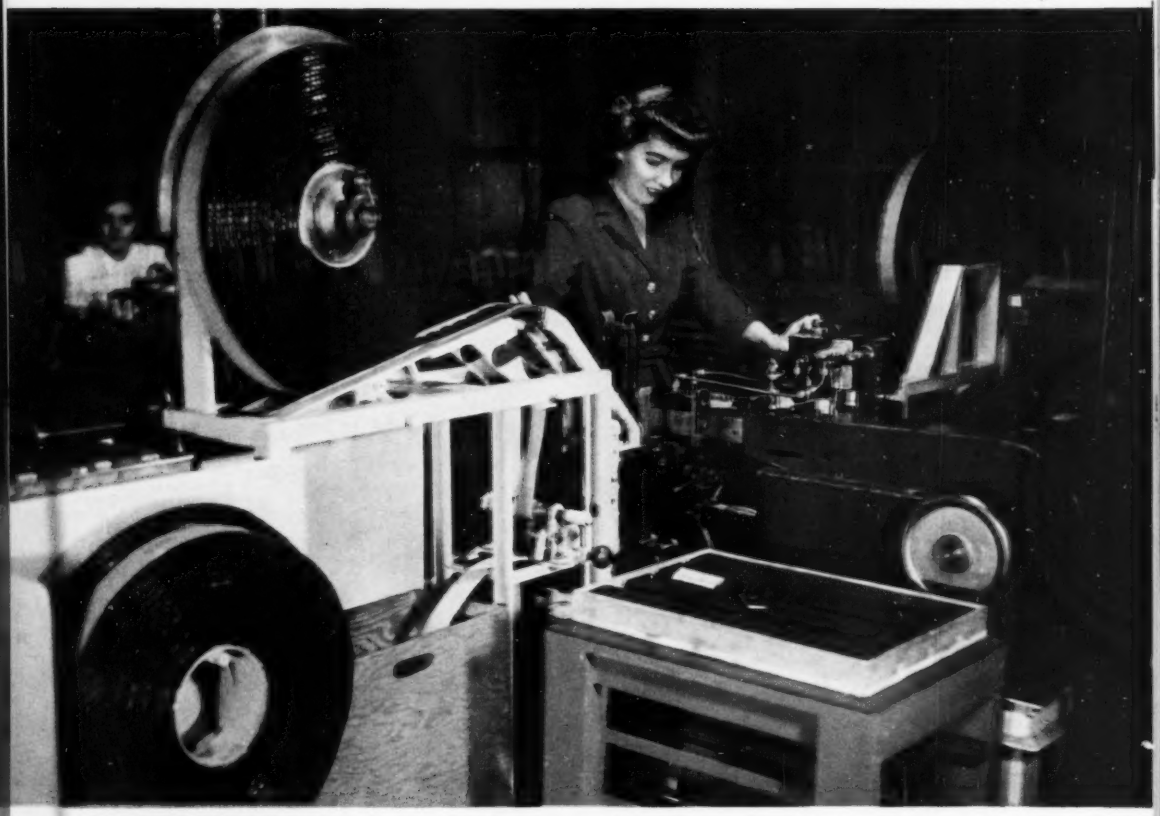


HISTORICAL SEQUENCE of Gillette presentation cases: (1) the World War I "Khaki Set"; (2) the "Brownie," Gillette's first dollar razor, introduced in 1922 to meet the challenge of competitive companies; (3) the "Cigarette Set," a dual-purpose package 'way back in 1924; (4) the "New Standard," a favorite of the late '20s; (5) the "Treasure Chest," handsome gift package that spurred bulk blade sales in 1930; (6) the "Red and Black Set," 1935; (7) the "Exposition Model," designed to tie in with the New York World Fair; (8) the "Jewel Case," 1940; (9) the G. I. kit, general issue to millions of "Joes," young and old, in World War II.

COLOR PLATE COURTESY FARRINGTON MFG. CO.

LUXURIOUS postwar packages (10 and 11) continue the long tradition of Gillette's planned packaging, which has made shaving a far more attractive and appealing habit to millions of shavers. Frequent change in design and merchandising theme of packages has kept pace with improvement in product. Two popular sets in the current line are the "Milord" (10) and de luxe "Aristocrat" cases (11).

COLOR PLATE COURTESY *Steelways*.



DISPENSER LOADING. This Gillette-developed machine counts the blades, alternates them in the bottom section of the plastic dispenser and locks the cover into place. The operation is entirely automatic. At no time are the blades touched by hand.

the adoption in 1908 of an excellent diamond-shaped trademark, in which was centered the name "Gillette" with an arrow running through it.

The era of competition

Gillette successfully fought off numerous imitators during the first 17 years, but with the expiration of the original patents in 1921 the company became powerless to prevent other companies from producing blades that would fit in the Gillette razor.

Gillette finally had to accept the idea that there would always be competition in the blade business and turned to the only alternative strategy: to produce a Gillette blade so fine in quality and so strongly backed by prestige promotion that it would be accepted as "the best," if not the only one.

This resulted, in 1932, in the introduction of the Blue Blade, selling at the comparatively high price of five for 50 cents or 10 for $1. A year later these prices were halved and have remained unchanged since.

Package-wise the product change was effectively announced by adopting a distinctive two-tone blue design for blade wrappers and cartons.

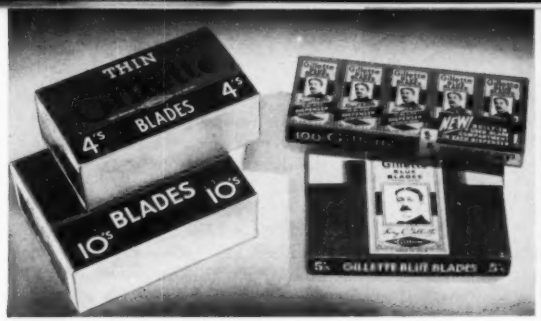
The Gillette company, always on the lookout for something that would appeal to practical-minded shavers, noted that the heat-sealed cellophane wrapper on its cartons was hard to open. Accordingly, it was decided to perforate not only the carton—part way down the edges of the back panel to provide a hinged end-opening—but also to slit the carton and the outer cellophane wrapper. The result is a simple, effective convenience feature that unquestionably has won wide approval from users.

Since a good share of its competition came from makers of cut-price blades, Gillette brought out, in 1939, a lower-priced companion to the Blue Blade, which, made of thinner steel, was named the Thin Gillette Blade, selling at four for a dime or eight for 19 cents. The eight pack was later replaced by a 10-for-25-cents pack.

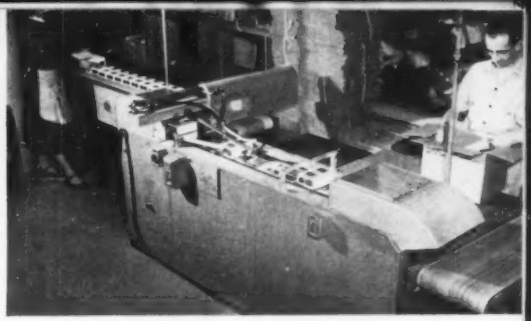
The plastic dispenser

Gillette created a minor revolution in the razor-blade industry in 1947 when it brought out the first rigid dispenser package for two-edged blades—offered as a package for either 10 or 20 Blue Blades at no extra cost.* In various test areas, blade sales increased as much as 65% during the first two weeks of the introductory test. Packaging has seldom made a more notable contribution to consumer convenience. It has been described as the biggest blow to the

* See "Blade Time-Saver," MODERN PACKAGING, Nov., 1947, p. 114.



DEALER PACKAGES for Blue and Thin blades. The 10- and 20-blade Blue dispenser packages use a side sleeve and printed cellophane overwrap; five-pack comes in printed cartons. Thin Blades are shipped in folding cartons holding 200 blades.



AUTOMATIC SEALING of dealer Thin Blades cartons is done on this box-sealing conveyor. Machine centers strips of transparent cellophane tape on tuck-in flaps of carton. PHOTO COURTESY MINNESOTA MINING & MFG. CO.

iodine-and-bandage business since the invention of the razor-blade-disposal slot in Pullman cars and bathroom cabinets.

The dispenser also meant better blade protection. The dispenser's special construction holds blades firmly to prevent rattling and chafing. Since the blades no longer had the protection of the customary paper wrappers, there remained the problem of corrosion. This was solved by spraying the blades with an invisible film of fine oil, which the company claims will prevent rusting under all normal conditions.

So effectively did the new dispenser, developed in Gillette's own research department, overcome the hazard of unwrapping and inserting a blade in the razor that nearly every competitor was forced to follow suit. Many types of dispensers appeared. One of the most interesting recent competitive developments is a die-cut open-end paper wrapper permitting the user to hook the blade on the razor and slide off the wrapper.†

There can be little question as to the success of the dispenser. Trade sources outside the company estimate that more than a quarter-billion dispensers have been produced since 1947, with current production about 100 million a year.

Low-cost volume manufacturing methods, use of low-cost polystyrene material and Gillette's specially developed mechanized method of filling the blades into the dispenser—plus the sales-promotional value of the convenience feature—made the plastic container practical in a field where it would seem that the packaging margin could not stand the additional cost.

† See "Safety Blade Sleeve," MODERN PACKAGING, Dec., 1950, p. 84.

Gillette's 20-blade dispenser is injection molded of polystyrene in two complementary pieces which lock together. The interlocking construction with center guide bars prevent blade edges from coming in contact with any part of the dispenser. A curved steel band inserted in the base of the dispenser serves as a spring exerting pressure on the blades to hold them in place so that the topmost blade is always in position to be ejected.

The Gillette 10-blade dispenser has a plastic bottom piece and a metal cover. Construction is somewhat different from the 20s dispenser, but both work on the same principle. Both have a recessed compartment in the bottom section of the dispenser for holding used blades. The cover of the used-blade compartment is a thin piece of metal.

Packaging methods

Back in the days of the first blades, the packaging was all done by hand, with girl operators picking up each blade, placing it in an inner wrapper, folding over the flaps and repeating the process with an outer wrap. The packaging was necessarily slow and hazardous, and at the same time required extreme care to avoid damaging the edge of the blade.

Automatic packaging machinery was the obvious answer to any attempt at producing razor blades in sufficient quantity for mass distribu-

ASSEMBLY of wire-rack merchandisers with packaged razors. Cases are brought to packers by conveyor. Racks are held in a jig. This low-cost rack meets modern demand for compact display and discourages pilfering, since the plastic cases can only be inserted or removed vertically.

FAMOUS GNOMES created by Vernon Grant were teamed with Santa in this eight-color lithographed display, typical of Gillette point-of-sale aids. Gnomes appeared in national magazine ads, then were used to provide tie-in support.

TODAY'S RAZOR LINE ranges from 49-cent Tech to $10 Executive (upper right). Most popular and subject of biggest merchandising push is the $1 Super-Speed in red and crystal polystyrene (lower center). Such smart "presentation packaging" has helped the Gillette company to sell millions of razors—and, at the same time, billions upon billions of blades.

tion. Only by the development of machinery of utmost precision was the problem of blade packaging eventually solved. Today, all packaging is done automatically.

The essential packaging requirement for razor blades obviously is the prevention of rust. Thus, as in military packaging of metal parts, the preliminary corrosion treatment is part of the packaging consideration.

Before the blades are sharpened, the coil of steel passes into a special lacquer and then through squirrel-hair brushes that smooth out the coating before it is baked on. Later, when the blades have been sharpened and have passed final inspection, they are treated with a spray of powerful antiseptic and anti-rust oil. The blades are then sent to the dispenser-loading or blade-wrapping departments.

The dispenser-loading machine, an exclusive Gillette development, picks up the blades by suction and automatically counts and carefully places them in the bottom section of the dispenser. The tops are then snapped on and loaded dispensers move on to individual cartoning and cellophane overwrapping. According to Gillette, the dispenser-loading machine handles blades at a rate of 150 a minute. At one time the individually cartoned dispensers were placed in dealer cartons holding 10 or 20 dispensers. The dealer carton has recently been eliminated in favor of a partial sleeve and a heat-sealed overwrap. The overwrap is reverse printed in five colors by rotogravure on the inner surface of the sheet.

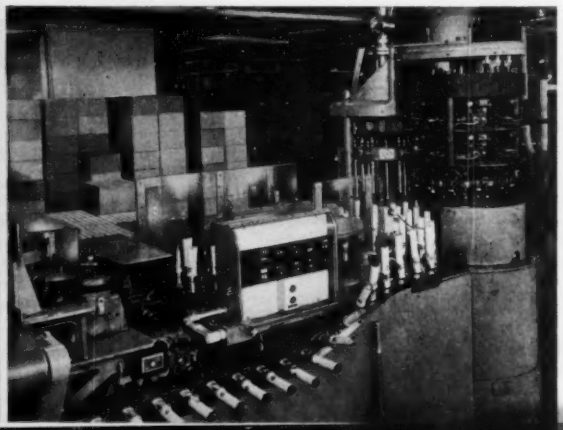
Many blades (particularly the economy-priced Thin Blades) are still marketed in waxed paper inner wrappers and the printed outer wrappers. Obviously the waxed wrapper must conform to precision specifications for machinability and must afford special properties for corrosion protection. The blades are packaged by a wrapping machine that handles the blades pneumatically at a speed of at least 150 blades a minute. The wrappers are fed into the machine and spots of wax are applied on the inside of the wrapper to anchor the blades exactly in position so blade edges will not touch the wrapper edges. The machine then seals the wrapped blade in its printed outer wrap. The highly effective apparatus that applies the spot wax was specially developed by the company's research and engineering department.

Cartons for the retail store—50 four-blade packages, 20 five-blade packages, etc.—are formed automatically by a machine that takes die-cut blanks from a magazine and discharges finished cartons ready for filling at speeds up to 102 cartons a minute. After the cartons are filled, they pass through an automatic box-sealing conveyor unit that applies strips of transparent cellophane tape to the tuck-in flaps of the six different sizes of razor-blade cartons.

The pay-off for Gillette's years of pioneering in packaging is nowhere better illustrated than by its success in adopt-

COMPANION PRODUCT for razors and blades is Gillette brushless and lather shaving creams, featuring the facial antiseptic ingredient "K-34," which has won favor both with testing labs and users.

AUTOMATIC TUBE FILLING. This machine cleans, panels, fills and closes tubes of shaving cream at high production speed. Recently installed at the Gillette plant, the machine helps the company meet demand for increased output and greater efficiency.



ing the molded polystyrene case for its Super Speed razor. This modern case with its bright red bottom and crystal lid is the finest container ever used for the Gillette dollar razor. The case is a sparkling unit for display and is eminently practical for use at home or when traveling. A plastic divider at the back of the case separates the blade dispenser and razor when the case is closed. This prevents moisture (from the razor, which is hot and wet after use) from reaching the blades in the dispenser.

Other razors in the Gillette line are the three-piece "Tech," which sells for 49 cents and the de luxe models —"Aristocrat" and "Executive." The premium-priced models are intended for the gift market and for men who want a richer-looking razor and kit, especially for use when traveling.

Other products

Gillette came on the market in 1938 with shaving cream packaged in collapsible tubes. In 1947 "K-34," a facial-antiseptic ingredient, was added to the cream and has been a major selling feature ever since.

Package design for the cartons and tubes was streamlined in 1948. A fully automatic, high-speed tube-paneling and filling machine has just been installed to help meet demands for expanded production.

An indisputable sign of vigor in the nearly half-century-old Gillette firm was the purchase, in 1948, of the Toni company, a strictly modern trail blazer, for an estimated $20 million. Here was a tremendous business coup that enabled Gillette to broaden its line and potentially take over the other (distaff) half of the world's customers. Sparked by the phenomenally sensational "Which twin has the Toni?" campaign, the home-permanent business has mushroomed into an enterprise that has given beauty parlors as big a headache as Gillette razors and blades gave the barber and shaving-mug business.

Earnings from 1950 operations in the United States and Canada were reported at $3,295,901. Gillette shaving products in the same countries earned $7,788,381 during 1950.

Current promotion

The company's advertising appropriation is now at a record level. Its $6,898,708 expenditure in 1950 for advertising in magazines, on radio and TV was exceeded in the same media by only 16 other advertisers throughout the country.

Advertising has always been backed up with the strongest kind of dealer promotion. As many as 30,000 window displays appear nation-wide for the World Series–15,000 displays are customary to tie in with lesser events. The displays are installed professionally at Gillette's expense.

Through the years many resounding campaigns have been initiated, but perhaps none is more deserving of special recognition than the $2 to $1 bet that the company promoted in connection with the 1949 Derby, Preakness and Belmont broadcasts. Gillette wagered $2 to $1 (the price

(This article continued on page 183)

Grand Award Winner in Folding Paper Box Competition

A pictorial family of Cross Country grass seed cartons, made by the Forsberg Paper Box Co., Madison, Wis., for Ostberg Seed Co. and Sears, Roebuck & Co., emerged as Grand Award Winner in the 1951 carton competition sponsored by the Folding Paper Box Assn. of America. The winning entry, chosen by a vote of members attending the annual FPBAA meeting in Chicago, was also winner of the Miscellaneous classification of the competition, as reported in the April, 1951 issue of MODERN PACKAGING, p. 170.

The cartons, which have glue-sealed flaps and are open at the end, are unusual for grass seed in that the design runs horizontally. Since the artwork portrays an attractive home with perfectly tended lawn, the horizontal treatment permits use of a broader, more effective illustration highlighting the grounds. The lawn, which dominates the front panel, extends over the two end panels, with the back of the package left white except for printed instructions on lawn care.

The carton design was created by The Cramer-Krasselt Co., 733 N. Van Buren, Milwaukee 2, Wis. A single basic illustration was utilized for all four carton sizes—½ lb., 1 lb., 3 lb. and 5 lb.–since the display panels are identically proportioned. The cartons are printed letterpress in four colors on machine-coated board and varnished. Principal lettering on the display panel lists the type of seed contained, while the Cross Country brand name and shield are introduced unobtrusively in the upper left corner.

An interesting design detail is the use of a curving walk which leads the eye across the lawn to the handsome house in the background.

SIX DOZEN PENS are displayed in this compact counter merchandiser. Star pattern and tiering give impressive pyramidal effect and permit easy selection by the customer of a pen with the desired initials.

COMPONENTS of the compact Identi-Clip display are six diamond-shaped reverse-tuck-end folding cartons fitted into a hexagonal base, with a backdrop.

NOVEL FOLDING-BOX CONSTRUCTION

MAKES COMBINED PACKER, DISPLAY

Starring

Unusually ingenious in construction and admirably suited to its purpose is the counter-display merchandiser being used by Flo-Ball Pen Corp., North Hollywood, Calif., in merchandising its "Identi-Clip" pens. The carton won for its maker an honorable mention in the Display-Construction Division of the recent annual competition of the Folding Paper Box Assn. of America.*

First of all, the display affords an unusual mass effect for 72 pens arranged in a star pattern in two tiers so that initials on the personalized pens can readily be seen and selected.

Another feature of the display is the fact that it is simple to pack, safe to ship—with each pen held securely in place—and about 99% set up on arrival.

The six pen-holding segments of this display are simply six reverse-tuck-end folding cartons. They are cut on the bias and fitted in die-cut sections of a simple hexagonal base, with a printed backdrop as a frame. The cartons, which are diamond shaped, dovetail neatly to form a six-pointed star when inserted in the hexagonal base. Liners inserted in the cartons have perforations matching holes in the top of the carton, thus providing a double grip on the pens, which are packed, shipped and displayed in an upright position.

Set up with the 6 doz. pens inserted in perforations in the cartons, the entire display packs in a sturdy corrugated shipping container and is held in place firmly by several corrugated inserts. By no means least in importance is the fact that the pens when packed in this manner receive ample protection during all further handling and shipping. This is because each pen is held firmly in its pocket and the display itself is rigidly supported in the shipping carton.

The dealer receives the display in its single carton, ready for installation by simply attaching the upright backboard. The three carton sections that form the back tier of the display are taller than the three sections that form the front platform, providing an effective two-step arrangement. The star-shaped pattern of the display itself assures compactness and at the same time makes the initialed pens easy to pick out. Maximum angle of visibility is afforded for each group of pens and this is especially important since there are 26 different initials to be displayed.

The individual carton sections of the display are set

* See "Folding Box Winners," MODERN PACKAGING, April, 1950, p. 170.

OF THIS THIS COUNTER UNIT

AND DISPENSER FOR 72 BALL PENS

the pen

ASSEMBLY is a simple matter of inserting the liners to reinforce each of the cartons and then tucking in the end flaps. Holes in the liners and the cartons hold each of the pens with a tight dual grip.

up and inserted in the hexagonal base section by hand, each complete section becoming in effect its own jig for the further operation of holding the assorted pens as the packing progresses. Letters of the alphabet are printed opposite the penholder perforations in the top of each carton to make sure the variously initialed "Identi-Clip" pens are packed in a uniform pattern, the right number of initials in each group.

At the Flo-Ball plant, pens are inserted in the display at a long work table, where women operators are supplied with tote boxes filled with pens bearing the proper initials for each work station. One operator fills in the A's through the E's, another the G's, H's and I's, and so forth. Finally, when the display reaches the end of the table and is completely filled, it is placed, with its backboard, in a shipping carton. Partitions are inserted to hold the display in place and the carton is then ready for sealing and shipment.

On the backdrop of the display, the trade name "Identi-Clip" is carried on an arrow background panel, the arrow pointing to an enlarged illustration of the initialed pen clip and copy reading "the pen that is always yours!" The backdrop also features the low price, 98 cents, and *Good Housekeeping's* guarantee seal. The base of the display shows a group of lodge insignia that are also available. Copy and design are held to a minimum and are streamlined for modern display and hard-hitting selling effect.

In recent months there has been an upsurge in the marketing of ball-point pens,† with various manufacturers stressing quality of an improved product in order to regain ground that was lost because of a few poor-quality brands that appeared in the first merchandising rush about five years ago. Flo-Ball maintains that its products have never suffered because of poor quality. Elaborate inspection routines assure that each pen is a precision instrument.

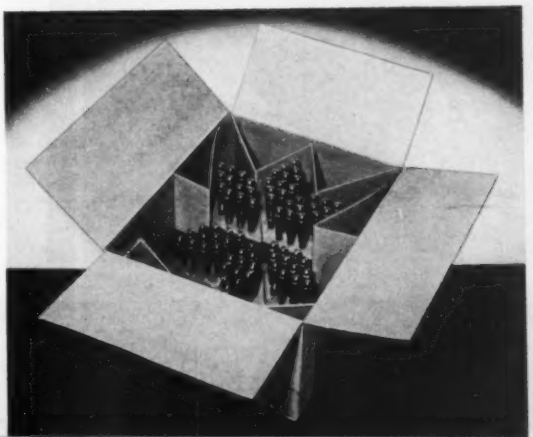
An important part of the ball-pen comeback, in addition to increased emphasis on product quality, has been a refreshingly new interest in improving the package and displaying it for maximum sales impact. Flo-Ball's efforts are perhaps typical of what must be done to command counter space and re-awaken jaded consumer interest in any "fading" product.

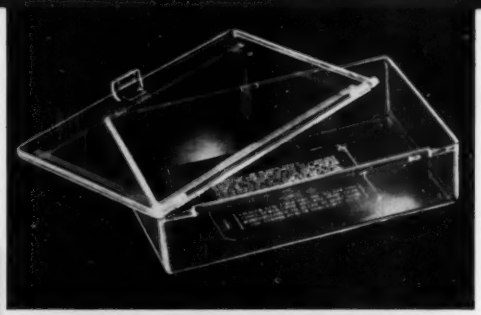
CREDIT: *Display merchandiser, Folding Carton Division, The Flintkote Co., Los Angeles.*

† See "Ball-Point Revival," MODERN PACKAGING, Feb., 1951, p. 108.

PRODUCTION LINE at Flo-Ball plant. Each display is its own jig for packaging operation, aiding packers in selecting the right number of individual initials for each set-up and holding pens in position.

SNUG AND SAFE for shipment in its corrugated container, the display is ready to use simply by attaching the enclosed backdrop. Corrugated inserts hold the display firm during shipment and handling.



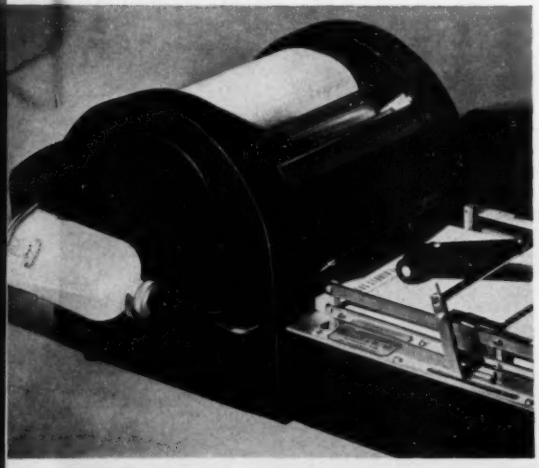


Transparent plastic cigar box

The Webster Tobacco Co., New York, is believed to be the first to use a molded transparent plastic box as a consumer package for cigars. The company's Perfecto Chico 10s are packaged in this injection molded polystyrene box that has re-use value for either the smoker as a small tool kit or fly box, or for his wife as a jewel case or sewing kit. Two small lugs are molded on the bottom and two holes are molded in the lugs on the cover. Assembly consists simply of bending the cover slightly so that the lugs on the bottom snap into matching holes in the cover. A protrusion molded on the front of the bottom section snaps into an undercut hole molded in the front of the cover to close the box. Identity is provided by a paper label applied to the top cover. Required legal information is molded in the bottom of the box base.

CREDITS: *Box molded by Injection Molding Corp., Division of Whyte Mfg. Co., Inc., New York, using Dow Chemical Co.'s Styron. Label, Schlegel Lithographing Co., New York.*

Polyethylene bottle reduces duplicating-machine service calls



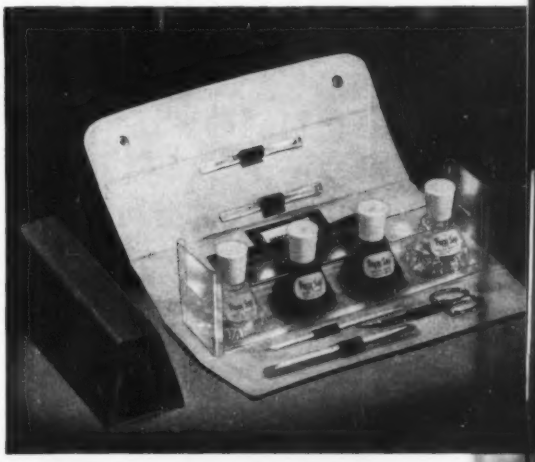
Use of the unbreakable polyethylene bottle as the fluid container on its duplicating machines has been found by Rex-O-Graph, Inc., Milwaukee, to eliminate a minor, but frequent cause of service calls on this type of equipment. With the glass bottle previously used, operators often chipped the neck slightly when refilling, which resulted in air leakage where the container is connected to the hose feeding fluid to the machine. This leakage caused the fluid to flow unevenly and to spoil the quality of duplicated copies. The polyethylene bottle cannot be chipped and thus always provides a perfect seal. Another problem—ridging of the rubber gasket against which the bottle rests at the hose-connection point—has also been eliminated. Polyethylene is relatively soft and is thus reported not to cause this ridging. Rex-O-Graph uses a standard 16-oz. Boston Round bottle. The company's trademark appears around the bottom of the bottle.

CREDIT: *Plaxpak bottle, Plax Corp., Hartford, Conn.*

HISTORIES

Acetate and leather form luxurious manicure sets

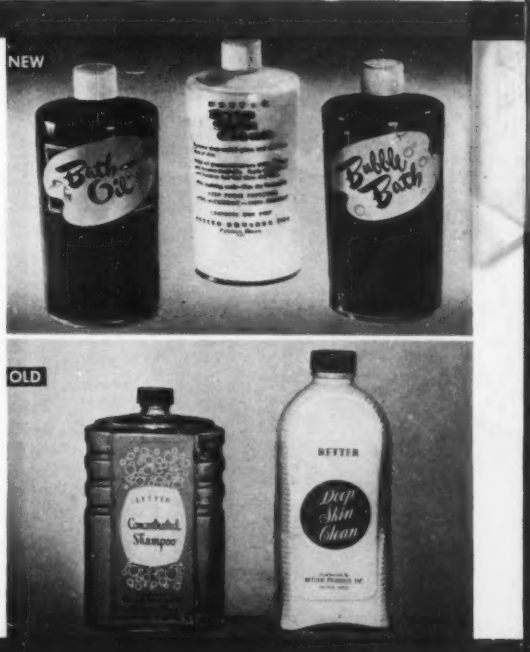
Cellulose acetate has been combined with leather to create a complete line of smart, new manicure sets recently introduced by Peggy Sage. The cloth-lined leather case is of the fold-over type, with the transparent acetate tray affording the required rigidity. The tray consists of a base, on which the bottles of fingernail polish rest. Side pieces rise slightly above the height of the bottles. The top sheet of acetate is affixed to the sides and is made with semi-circular cut-outs which fit around the necks of the bottles. When the case is closed, the sides of the tray form the sides of the case. The sets are fitted with the new Peggy Sage Crystallin Finish polish in newly designed cone-shaped bottles with fluted circular base. The case illustrated holds four bottles. Similar cases are made for two and three bottles of polish.



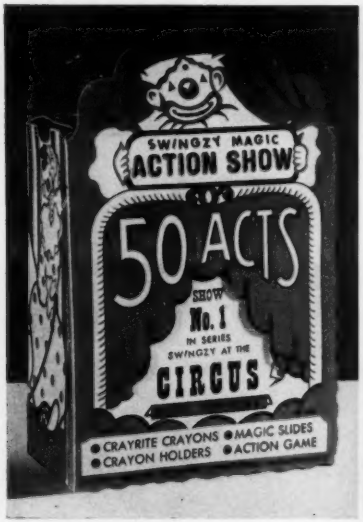
CREDITS: *Case, Fabracase Transparent Box Co., Springfield, Mass., using Eastman Kodak Co.'s Kodapak cellulose acetate. Bottle design, Donald Deskey, New York.*

Packages for 'home parties'

There's a lot of difference between packages designed for counter selling and for direct selling. An interesting example of the latter is the new line of toiletries items marketed by Better Brushes, Inc., Palmer, Mass. This company merchandises its products through the "home-party" method. A representative arranges for sales demonstrations in the homes of selected customers who invite friends to be present. The package design for such purpose can be a little less commercial, with less emphasis on brand name and more on pleasing appearance at close range for those present to see and make their selections among the products demonstrated. Thus the product names "Bath Salts," "Deep Skin Clean," "Bath Oil," "Bubble Bath," etc., are given prominence on these bottles with applied color labeling and the company name is placed on back of the bottles in small-sized lettering.



CREDIT: *Bottles, closures and ACL labeling, Owens-Illinois Glass Co., Toledo, Ohio.*



CLOSED, the Swingzy Circus package gives only an intriguing hint of the many hours of childish pleasure that it contains.

OPEN, it reveals two removable holders, each containing four crayons, together with three tear-out slides to be colored with the crayons and used as backdrops for the show. Slides are interchangeable and reversible.

CIRCUS IN A BOX

Providing hours of fun for children with a dime-store package which is an action game and coloring book as well as an excellent display unit and container would seem to set some sort of record so far as packaging ingenuity is concerned.

Such a package is Milton Bradley's "Swingzy Magic Action Show," a paperboard carton for crayons with a bewildering number of play possibilities, including a set of slides to be colored and then inserted in the carton to stage a series of 50 amusing circus, cowboy, zoo or other acts. Special juvenile appeal is provided by a lively surface design, plus a hinged construction and "secret window" that provide a second complete stage setting after the package is opened.

Because of keen competition that exists in the selling of crayons, Milton Bradley faced a problem of finding a new sales angle to serve as a wedge in having "Crayrite" crayons merchandised by syndicate stores.

The new stage-play carton, patented product of an ingenious independent carton designer, proved to be just such a wedge. The curious carton, the company found, could easily be adapted to hold eight crayons and keep them safe from breakage (a much-needed feature) in easel-backed holders that could be removed from the package for use; it also provided a fascinating toy for children, who always like to play "show," a use for the crayons themselves in coloring the slide backdrops and an effective display unit bound to get attention even on crowded dime-store counters.

Despite its several parts and seemingly complex construction, the entire

Swingzy box and all its components are die cut from a single blank of inexpensive paperboard.

The box has a hinged fold-over front cover and is divided into two sections that are self hinged. The two sections are swingable about the common axis on which they are joined. In one position, the two sections form a miniature stage; revolved into the second position, from the back, they surprisingly form a second and entirely different stage.

A set of three hinged paperboard slides is stapled into position between the fold-over cover and the box, held by tabs and perforated so they can be torn out. The slides, when inserted either complete or one-half at a time in slots to form changing backdrops for the stage, provide a total of no less than 50 scenes or acts. Each slide is printed both front and back, with different scenes, and either side may be used.

Two editions of the package containing crayons have been marketed by Milton Bradley: "Swingzy at the Circus," presenting animal and clown acts, and "Swingzy the Cowboy," with rodeo acts.

The astonishing variety of scenes in the stage is made possible by the designer's ingenuity in arranging the scenes so that a half of any card may be placed with a half of any other to form a composite animal which, if not completely sensible, doesn't seem to tax the childish imagination at all. The six-year-old finds boundless amusement in fitting together such combinations as the forepart of an elephant and hind quarters of a tiger. And when he tires of one stage setting, he can reverse the package and have a different one.

Instructions for use are printed on the package, but the child doesn't need much tutoring to discover the possibilities. If he is old enough to understand it, a numbering system on the corners of the cards enables him to check off on a list on a cover slide all of the 50 possible combinations.

Crayons for coloring the slides are inserted in die-cut paperboard holders, which come inserted in the backdrop sections of the stage—four crayons to a holder and one holder for each of the two sections of the box. When the crayons are displayed in the box, they provide a third-dimensional appearance of bars on a circus cage against the integral backdrop scenes. The crayon holders upon removal form convenient desk stands.

Coloring the slides enhances the enjoyment children get from feeling that they are actually putting on the show. As with many toy games, manipulation is not as complicated as the directions might make it appear. One of the intriguing features of the Swingzy package is its appeal to children's busy imaginations and their desire to play with something constructive and challenging.

Production of the slides and cartons is so planned that the assortment of designs and two-color combinations—except for artwork and etchings—cost no more than a single design and color combination.

Milton Bradley receives the cartons in the flat. Slides are stapled inside the front fold-over cover. The boxes are folded to shape; bottom flaps are tucked in; stage platforms are positioned; crayon holders filled with crayons are inserted and the top flap is tucked in. The cover flap is held in a closed position with pressure-sensitive tape.

Crayons are inserted in the holders in a subassembly operation that employs a special machine. Final assembly, except for stapling of slides and inserting of crayons in crayon holders, is done on a bench equipped

ENDLESS CHANGES in acts can be accomplished by inserting half or full slide to change the backdrop. Nonsensical half-and-half animals provide seemingly endless variety that children love. By using both fronts and backs of the three cards, 50 different circus scenes are possible.

COWBOY RODEO is the subject of "Swingzy, The Cowboy," a second edition of the crayon package. Rodeo scenes and amusing combinations can be presented in a total of 50 variations, just as in the circus package.

with special jigs and dies to help the girl operators do a quick and efficient job. This packaging set-up also lends itself to intermittent operations, required by the seasonal demands for many different products produced by Milton Bradley at its Springfield, Mass., plant.

The Swingzy packages are shipped in completed form in chipboard boxes.

So far, Swingzy sales have been limited to the syndicates. Swingzy with eight crayons retails at 29 cents and is said to have experienced a highly favorable reception.

One obvious handicap of the package is that the full extent of its play possibilities cannot be really conveyed on the package itself or by anything short of actual demonstration. Closed, the package has comparatively little appeal and does not show clearly that it contains crayons. Milton Bradley reports that it has been successful, however, in getting variety stores to display a few packages open to give a better clue to the contents. The most successful results have been experienced in those instances where demonstrators have been employed.

A display board showing the 50 different Swingzy acts was also devised to help introduce and merchandise the action package. However, display without demonstration has not produced as many sales as display with demonstration, because the element of action was missing and operation of the show features of the package required some study on the part of the juvenile buyers, to whom this type of combination toy and crayon package is a completely new idea.

Sales clerks at toy counters, of course, have little time to sell a product aggressively and it is axiomatic that products must move fast in order to make good in the syndicate stores.

That Swingzy has successfully survived its initial tests as a new kind of combination package, display unit and toy in the fast and competitive action in chain stores is a tribute to its effectiveness.

The type of novelty package would seem, in itself, to have a limited usefulness. But the principle of a play package is gaining acceptance in every field from soap to breakfast food and the wealth of ingenious devices incorporated in Swingzy can be widely useful everywhere. Milton Bradley has a limited-time exclusive on the Swingzy design for crayons only.

CREDIT: *Swingzy cartons designed and controlled by William Homer Colgate, West Redding, Conn. Cartons supplied by Container Corp. of America, Chicago.*

BACK OF CARTON shows how two halves are self hinged together.

SWINGING on axis of the hinge opens up an entirely different stage setting.

FULLY OPEN, the back stage provides a new setting for repetition of 50 acts.

One-cup coffee bag

FILTER-PAPER PACKET LIKE A TEA BAG IS LATEST INNOVATION IN TREND TO QUICK COFFEE MAKING

EIGHT BRANDS of coffee now being packed by the new method of coffee packaging. Packaging is done on a custom basis through a firm which grinds the coffee, fills the bags, puts them into jars and applies the labels.

A practical means of processing and packaging coffee to provide a cup of flavorful brew without messy grounds and time-wasting measuring has been a major aim of the coffee industry for years. Popularity of soluble coffees has proved the ready consumer demand for such convenience in coffee making, but since the first tea bags appeared, coffee companies have also been studying the possibilities of the individual-cup coffee bag containing premeasured 100% ground coffee.

Now, after more than six years of experimentation and development, a method of packaging freshly ground coffee in individual-cup bags for use like the popular tea bag has been adopted by a number of prominent coffee roasters including S. S. Pierce, Boston; Arnold & Aborn, New York; Campbell & Woods, Pittsburgh; Dannemiller Coffee Co., New York; Woolson Spice Co., Toledo, Ohio; Independent Grocers Alliance Distributing Co. and others.

The packaging is being done by a custom packer specializing in this field and the method is said to overcome previous obstacles of quick extraction, proper automatic-packaging facilities, bag size and cup sediment. The individual bags, packed 20 to a vacuum-sealed glass jar, were first test marketed by two New England brands in the summer of 1949.

Coffee companies packaging their blends by this method ship their coffee in whole roasted bean form to the custom packager's plant where the coffee is ground for best extraction qualities and packaged automatically in the bags made of filter paper, which in turn are vacuum packaged in glass. Glass was chosen as the container because it could provide the vacuum protection so essential to ground coffee and at the same time by its transparency show at a glance the form and the method of use of the new unit package.

The coffee company's own brand labels are affixed to the jars, which are packed 12 to the case carton and sent to the customer ready for distribution.

TO MAKE A CUP, user simply puts bag in cup, fills it with rapidly boiling water, presses bag with spoon and allows it to steep from three to five minutes.

The service includes the cost of the jars, caps and labels.

Chief advantages to consumers claimed for the individual coffee bags are: (1) consistently controlled quality of coffee, (2) individual steeping of each cup to desired strength, (3) grounds easy to dispose of and no coffee pots to wash and (4) no measuring.

The user simply places a coffee bag in a cup and slowly pours rapidly boiling water over the bag until the cup is filled to the brim, presses the bag gently once or twice with the back of a spoon and steeps to taste three to five minutes. Or the coffee may be made in a pot in the same manner, using the required number of bags for the desired number of cups. The coffee bags are also recommended for iced coffee by brewing as for the pot method but using only ⅔ as much water per bag and pouring the brew over ice or ice cubes in glasses.

Acceptance, of course, depends on the flavor and aroma obtained by the use of the individual-bag method of making coffee. The theory is that coffee made in this convenient way approaches more closely the method of professional tasters who make their coffee in a cup by pouring boiling water over loose grounds to achieve the utmost in aroma, body and flavor.

Consumer satisfaction, the custom packer says, is being evidenced by the continuing number of repeat orders received by the companies which have adopted this method of packaging.

CREDIT: *Steepolator bags and custom packaging, Modern Coffees, Inc., Boston, Mass.*

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PACKAGING

1 How a family of set-up boxes can help to establish brand identity and recognition for a line of novelties and souvenirs sold through variety, chain and novelty stores and to the tourist concession trade is illustrated by these three-color lithographed mailers adopted by Almar Metal Arts Co. Boxes, Model Box Co., Pittsburgh.

2 An essential sales tool for many items sold in open display is the carded package that shows at a glance product uses which would otherwise not be obvious to the shopper. This carded package for the Kesco Co.'s roll cutter won an honorable mention in the recent 15th Annual Variety Merchandiser Packaging Competition. Design, A. E. & R. C. Shaw, Chicago. Card, Huron Press, Inc., Chicago.

3 Pre-baked frozen waffles that can be popped into the toaster and come out golden brown is the newest product of Associated Frozen Foods Corp. The visibility package for these Patrician Baked Waffles consists of a paperboard tray overwrapped with moistureproof cellophane and a paper label insert. Tray, Charles F. Hubbs & Co., New York. Cellophane (MS-6), Sylvania Div., American Viscose Corp., New York. Insert labels, Harmony House Press, New York.

4 Bluebonnet canned beer, product of the Dallas-Fort Worth Brewing Co., now comes in this sturdy carry-home carton letterpress printed in red and blue. Clever design makes use of the white bleached board to give the effect of three colors. Handle is in two halves which fold down to allow stacking in displays. The carton is machine filled and easy to assemble and handle. Carton, American Coating Mills, Chicago, Div. of Owens-Illinois Glass Co.

5 After almost 25 years' continuous use of a two-piece metal box, Packer's Tar Soap is now appearing in a reverse-tuck, glassine-lined foil carton. Since this soap is used but occasionally for shampooing, the carton is said to provide an efficient storage container and barrier for wet soap. The carton should also put the company in a better position to meet the supply situation in view of metal shortages. "Foiline" carton, Robert Gair Co., Inc., New York.

6 Effective brand and product identity, and increased shelf appeal to encourage gift purchasing have been achieved in the redesign of the packaging for State-O-Maine robes for men, product of Van Baalen Heilbrun Co. It appeals both to men and to women, who purchase a substantial volume

as gifts. Design, Gerald Stahl, New York. Folding boxes, National Folding Box Co., Inc., New Haven, Conn.

7 Mint Flavored Apple Jelly, just released for national distribution by the H. J. Heinz Co., has been selected to carry a new label whose basic design elements will be adopted for this company's complete jelly line. The 10-oz. glass size is being retained because of its popularity with shoppers.

8 Only ½ in. in diameter and 2¾ in. high, this tiny unbreakable purse dispenser for Max Factor's World of Beauty Hand Lotion is reported to be one of the smallest polyethylene bottles in commercial use. Encased in a gold-finished metal case, it is equipped with a dispenser that delivers globules of lotion when tapped on the hand. The dispenser cap unscrews for refilling. Plaxpak polyethylene bottle, Plax Corp., Hartford, Conn. Metal dispenser, Bridgeport Metal Goods Mfg. Co., Bridgeport, Conn. Closure, Owens-Illinois Glass Co., Toledo, Ohio.

9 A new crystal-style bottle, redesigned label and neck band create a richer, more appealing package for House of Kasser Anisette, product of Kasser Distillers Products Corp. The diamond-shaped label is planned to carry out the motif of the bottle mold. Design, Allen Serody, Philadelphia. Label, Old English Printing & Label Co., Philadelphia.

10 Desert Gold Pitted Dates are now available in what is said to be the first commercial package of its type for this product—a printed-acetate overwrapped tray. The design, printed in yellow, orange, brown and white, allows ample visibility. Back of the wrap gives recipes for appetizers. Design, Tinsley T. Jepson, Los Angeles. Wrap printed on 100 P 912 Celanese cellulose acetate by Shellmar Products Corp., South Gate, Calif., plant. Trays, Master Carton Co., Los Angeles. Packaging machine, Package Machinery Co., Springfield, Mass.

11 Reportedly for the first time in the tissue field, ultra violet rays have been installed over the packaging lines by Pond's Extract Co., for Pond's tissues. The pocket-sized package and household folding boxes promote this feature as "violet-ray pure" on redesigned containers. Carton, New Haven Pulp & Board Co., New Haven, Conn. Cellophane wrap, Shellmar Products Corp., Mt. Vernon, Ohio. Tear tape, Wallsello Products, Inc., Clifton, N. J.

Pre-bagged apples

THE WASHINGTON STATE APPLE COMMISSION SUMS UP A TWO-YEAR STUDY OF COSTS AND EFFICIENCIES IN PRE-PACKAGING. By Earl W. Carlsen*

The Washington State Apple Industry has been making every effort to keep abreast of changing market practices. Most important of these changes is the trend toward pre-packaging. This is one of the reasons the Washington State Apple Advertising Commission organized its own research department five years ago and made pre-packaging one of the fields of study.[1]

The department conducted studies on the economics of pre-packaging and merchandising pre-packaged apples over a period of two years, from 1949 to 1951. This was largely done under contract with the United States Department of Agriculture under provision of the Research Marketing Act, with Donald R. Stokes being the contracting officer for USDA. The first year's research was confined to simplifying methods and reducing costs at shipping point, while the United States Department of Agriculture and Washington State College studied related phases. During the second year, the research department not only worked on improvements in techniques of pre-packaging, but carried on extensive merchandising tests in Los Angeles, Kansas City and Chicago. Several of the findings of this latest research are of general interest to pre-packers.

SIMPLE TIPPABLE CHUTE on a scale was found to be the best and most accurate way to bag fruit after many trials of more-elaborate equipment.

Type of package

A good package for apples (or similar fruit) must prevent damage to the fruit and provide a high degree of visibility for the shopper. These two requirements could not be met with one type of package and at the same time enable the packing houses to package all sizes of apples. The opinion prevailed that high visibility not only made it easier for the housewife to do her shopping, but also tended to discipline the packer and the retailer in preventing inferior, off-conditioned apples from being offered for sale. It was therefore decided that the best approach would be to emphasize research on a high-visibility package and devise techniques whereby it could be packed and shipped with minimum damage.

Means of preventing damage to bagged apples was learned in a number of trials with both Delicious and Winesap apples. It was found that even large-sized Delicious could be packed and shipped in film bags with less damage than in matched standard-wrapped and packed boxes. This achievement was accomplished by being careful to have the bag designed to fit the master container in which it was used and by having ample bag dimensions so that the fruit in the bag would fill out into the corners of the carton and nest into place when other bags were placed on the top of it. A tight-fitting bag tended to cause additional bruising, would not allow full weight in the master container and increased the likelihood of bag breakage. With the large-sized Delicious apples it was found that the bruising could be prevented by always place-packing the apples in each bag. A bagging device was designed in the form of a plastic chute that place-packed Delicious very neatly.

Mesh bags had been used on a small scale in the apple industry prior to the Apple Commission's pre-packaging research. It was reported among shippers that mesh bags could not be used successfully to ship our softer varieties of apples to distant markets without marking some of the fruit. But to be sure a good sales medium was not being discarded, the merchandising value of the mesh bags was checked. At the same time there had been an increasing num-

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* Research Director, Washington State Apple Commission, Yakima, Wash.

[1] See MODERN PACKAGING articles in April, 1948 (p. 124), Dec., 1949 (p. 80) and Oct., 1950 (p. 114).

ber of suggestions to use polyethylene film for bags as well as Pliofilm. Therefore test sales were made with mesh, polyethylene and Pliofilm bagged apples on sale in one display. It was found that the polyethylene bags sold as well as the Pliofilm. The mesh bags ran third in each of the three tests. The results of these sales are shown in Table I.

TABLE I—COMPARATIVE SALABILITY OF MESH, PLIOFILM AND POLYETHYLENE

	No. of bags sold		
	Mesh	*Pliofilm*	*Polyethylene*
Los Angeles			
1 store, 14 days	199	308	284
Chicago			
1 store, 14 days	285	308	321
Chicago			
1 store, 14 days	280	341	364

It should not be concluded from Table I that polyethylene bags will always sell as well as Pliofilm. Results might differ if a display were made up entirely of polyethylene bags. It might also be expected that there are a number of markets in which the mesh bag might be the preferred container.

Master containers

Experimental work soon showed that wooden boxes were not satisfactory as master containers for film bags, largely due to the abrasion of bags against the wood as the boxes were filled. A number of types of cartons were considered. The final results were that two different cartons are being used as master containers to ship pre-bagged apples.

One of these master containers for shipping pre-bagged apples is commercially used for the tray pack and has an advantage of avoiding the necessity of a packer stocking two different cartons. This carton (inside dimensions 11¾ by 12⅝ by 19⅝) is quite satisfactory with 3-, 4- and 5-lb. bags, although the pattern of packing the 3- and 4-lb. bags requires extra time in filling the carton and the 5-lb. bag is longer and narrower than might be best. The other carton that is used for pre-bagged apples was especially developed for this use (inside dimensions 12⅛ by 11 by 23¾). The design of this carton reduces the labor of placing the bags in the carton by approximately 25% because the bags can be packed in a more simple pattern within the carton. Its inside dimensions, however, may vary depending upon the dimensions of the walls of the carton, for the carton is made so that it will stack, with the length of the carton equal to twice the width.[2] This enables the carton to be "bonded" on pallet loads and in shipping. The dimensions of the carton are also such that it will make a minimum carload even in the smallest of refrigerated cars.

These cartons need additional structural strength for their use as shipping containers. Therefore, a wrap-around inside corrugated liner was designed—replacing the wooden corner posts which had previously been used in the industry to increase the stacking strength of the tray-pack carton. This inside wrap-around liner has proved so successful that it is now used in nearly all cartons in the industry.

In designing the special carton for consumer packages, it was learned that a regular slotted carton would save approximately 2 cents in fibre costs. This 2-cent saving was important because the high materials cost in pre-packaging was a main deterrent to packaging. The regular slotted carton also envisioned the use of an automatic case sealer in packing apples. The research workers proved to be very practical in their suggestions, for the regular slotted design has now been adopted for nearly all cartons in the industry and a number of case sealers are being used in packing houses. These two innovations—the regular slotted carton and the case sealer—will reduce apple packing costs by more than one-half million dollars during the current year.

Method of filling bags

In the course of the Washington State Apple Commission's pre-packaging research, every known method of filling apples into bags was considered. Yet, out of trials, a completely new method was developed, largely because every other filling device handled produce too roughly for an apple-packing operation—and, in the opinion of the writer, for almost any other produce, if spoilage losses are to be kept to a minimum. Not only did some of the existing filling devices handle the fruit roughly, but their weighing mechanisms were inaccurate and in one plant girls were observed frequently placing fruit in bags or removing fruit after the weighing was supposedly completed.

The way of overcoming the shortcomings in other filling methods was to use a chute which transferred apples gently into the bag and which, when operated with scales, did a very accurate job of weighing. In the process of developing this bagging device, a possible reduction of 50% in labor of bagging was achieved, compared with simply lifting the apples with one hand and placing them in the bag being held open with the other. This chute is shown in the illustration herewith.

The Washington State apple-bagging chute works on the principle of permitting the operator to slip a bag over the chute after the apples have been placed in it and either sliding or swinging the chute downward so that the apples are transferred smoothly into the bag. The apples can be fed into the chute automatically or placed into the chute by hand. In either case, the chute may be mounted on scales, so that the bagging will give preweighed units of bags of approximate weight. When the apples are fed into the chute automatically, it is found to save 23% labor per carton compared with filling the chute by hand.

The new bagging device was found at first to work very efficiently for bagging small apples. Later it was found that large-sized apples could be bagged by sliding the apples off into the bag rather than swinging the chute downward and waiting for the fruit to roll out. A modification of the chute was also developed which permitted large-sized, oblong-shaped Delicious to be transferred into bags in a pattern so that their cheeks always turned outward. This not only increased the eye appeal of the bagged apples, but it was found to be a means of preventing damage to the apples in transit.

Research at retail

The apple industry in the Pacific Northwest is very efficiently tooled up to turn out the standard pack. Grading and the method of sizing is more accurate than that generally used in any other growing area. How-

[2] Outside dimensions (24⅛ by 11¾ by 12 15/16 with a 7/32 in. corrugated board. A ⅜-in. extra length allows for some side bulge after the carton is filled.

ever, this specialization in the standard pack proves to be somewhat of a handicap to consumer packaging. Packers invariably have found that their costs spiral upward when they switch to any innovation in packing technique. It was soon made clear that there was a real need for more versatile types of packing-house equipment if consumer packaging was to be done efficiently. For this reason the research workers set out to learn what requirements the housewife sets on grades and methods of packing apples.

The packaging operation can be simplified and costs reduced if a range of sizes can be put in each bag. The Northwest apple industry sorts its apples into 19 different sizes. It was observed in modern self-service merchandising that frequently the retailers mixed these sizes together, so the question naturally arose—"Why not mix the sizes to start with?" Therefore, it was decided to learn to what extent housewives would permit the sizes to be mixed in a bag. Tests were designed for this purpose.

From the same lot of Winesap apples, bags were packed with three sizes in each bag and placed on sale in a panel of retail stores in Chicago, Kansas City and Los Angeles. The following week sales of bags with six sizes were carried on. Somewhat to the surprise of even the research workers, it was found that the range of six sizes sold equally well, in fact slightly better, than those with only three sizes. The results of these test sales are shown in Table II.

During another week an additional check on consumer acceptance of sizes was made. In one display, bags having mixtures of three, six and nine sizes were offered to the consumers. The bags with nine sizes had apples running from 2¼ to 3¼ in. The sales (Table III) gave no definite indication that consumers objected greatly to the wider range of sizes.

TABLE II—SALABILITY OF THREE AND SIX SIZES OF APPLES
(Nine stores—three markets)

	Lbs. handled per store per day	
	Bulk	*4-lb. bag*
Three sizes	33.4	42.5
Six sizes	35.3	51.0

TABLE III—SALABILITY OF RANGE OF THREE, SIX AND NINE SIZES OF BAGGED APPLES FROM ONE DISPLAY

		Daily store average	
Market	*Range of sizes**	*Pounds handled*	*Dollars sold*
All cities (9 stores)	3	22.4	$2.50
	6	24.4	$2.66
	9	20.0	$2.20

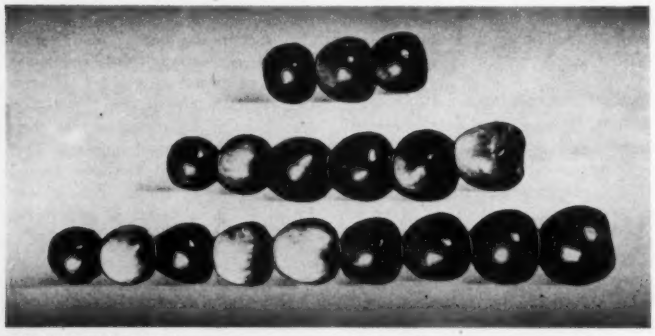
* Three sizes—138–163; six sizes—113–175; nine sizes—100–216.

In an additional check on the reaction of consumers to a wider range of sizes of apples, consumers were clocked as they made their purchases and, surprisingly enough, even from bulk displays with a mixture of sizes, housewives spent no more time picking their apples from displays with large and small apples mixed. In fact, they spent more time making their selection from more uniform range of sizes.

Another way in which cost of prepacking could be reduced at shipping point would be to avoid the necessity of sorting apples into grades based on small differences in color. So, research workers set out to learn the extent to which housewives objected to a wide range of color in their apples.

The theory was advanced by some in the industry that the reason for reaction against apples with only 50% color arose from the extensive use of self-service merchandising, which permitted housewives to resort apples on display. This affects salability of light-colored apples, particularly because they bruise more easily than those colored full red. Pre-bagging gave prospect of avoiding this problem and a test was devised for finding out for sure. The same lot of Winesaps was bagged and sold in two tests. The first week the bags held highly colored apples with a small range of color. The second week the apples were a medium range of color. It was found (Table IV) that the combination grade of Winesaps, with a medium range of color, sold as well as the small range of color.

It was thought that a wider range of color would induce some of the housewives to spend more time sorting and selecting the fruit. This, however, was not the case, except in Los Angeles where the housewives used more time to pick their apples from the bulk displays of medium range of color. However, the opposite was true in Chicago. In each of the markets the amount of time used selecting pre-packaged apples from the displays of the small and medium range of color was almost identical. These tests give little indication that these ranges of color affected sales. Apparently both lots of apples were within the color range that is generally pleasing to consumers.



SURPRISE FINDING was that consumers do not object to a mixture of sizes when apples are sold by weight. The photograph above shows the range of sizes within groups of three, six and nine apples as tried in the extensive merchandising tests. The six-apple assortment sold best.

Cost of retailing

Not only have costs of pre-packaging been studied and reduced at shipping point, but costs of retailing have been studied as well. Retail cost and margin studies were made with Winesaps from the same lot. Part of them packed in standard boxes and others in film bags were

placed on sale in test stores in three markets. Bulk and the bagged apples were displayed side by side and sold at the same price. During one two-week period, 3-lb. bags were used and in the following two-week period, 4-lb. bags were used. A research worker spent his full time in the store tabulating separately all the work and material that went into merchandising apples from both the bulk and pre-packaged displays. Stop watches were used to measure time taken to build the displays initially, maintain them in good appearance and wait on customers.

It took just over 17 minutes to merchandise 100 lbs. of bulk apples, but between only five and eight minutes to merchandise 100 lbs. of 3- and 4-lb. bagged fruit. Estimating the labor at $1.50 an hour, which is below the rate in most markets, it took 22 cents more labor cost per 100 lbs. of apples to merchandise bulk Winesaps than for those in 3-lb. bags and 28 cents more than for those in 4-lb. bags. Percentage-wise, it takes more than twice as much labor to retail bulk apples as prepackaged apples. These findings are detailed in Table V.

It has sometimes been suggested that a way of simplifying packaging would be to fill the packages without weighing, thus enabling the operation to be speeded up. The packages would finally be weighed by retailers. The greatest saving in labor at retail through the use of prepackaged apples comes from eliminating weighing of the bags, which costs the retailer 15 cents per 100 lbs. of bulk apples, compared with nothing for bagged fruit. Therefore it is not likely that pre-packaging in approximately measured units will gain widespread acceptance with retailers.

In addition to the saving in labor at retail, there is a reduction in the amount of spoilage when apples are sold pre-packaged. Reduced spoilage is one of the most consistent observations to be made wherever shipping-point pre-bagged apples have been sold.

In the merchandising studies comparing costs on bulk and pre-bagged apples, it was learned that 9 to 18 cents per hundredweight of apples was saved in spoilage and mark-down losses in addition to the labor savings to the retailer. At the same time, fewer paper bags were used when merchandising pre-bagged apples—a saving of 10 to 12 cents per hundredweight. For the retailer, these three items—labor, spoilage and paper bags—saved 50 cents a hundredweight. These savings (Table VI), when added to the most economical methods of pre-bagging at shipping point, indicate that pre-bagged apples may eventually be marketed at less cost to the consumer than comparable standard-wrapped and packed fruit.

TABLE IV—SALABILITY OF SMALL AND MEDIUM RANGE OF COLOR

	Range of color	*Pounds handled per store per day*		*Bags in per cent of bulk*
		bulk	*4# bag*	%
Chicago	Small	30.4	40.8	134.2
1 store	Medium	32.0	36.0	112.5
Kansas City	Small	25.1	72.8	290.0
3 stores	Medium	32.0	67.0	209.4
Los Angeles	Small	89.6	62.2	69.4
3 stores	Medium	98.8	101.8	103.0
All cities	Small	52.1	64.4	123.6
	Medium	59.3	77.0	129.8

TABLE V—RETAIL LABOR PER 100 LBS. ON BAGGED OR BULK APPLES

	Bulk	*3# bag*	*4# bag*
Minutes			
Preparing display	2.6	2.5	1.0
Maintaining display	8.5	5.4	4.3
Waiting on customers	6.0	0	0
Total	17.1	7.9	5.3
Dollar labor cost	$ .41	$ .19	$ .13
Per cent labor cost	3.6%	1.5%	1.1%

Labor costs on bulk were more than twice those on pre-bagged apples.

TABLE VI—SUMMARY OF RETAILING COSTS PER HUNDREDWEIGHT OF BULK OR PRE-BAGGED WINESAPS

	Bulk	*3# bag*	*4# bag*
Labor costs	$ .41	$ .19	$ .13
Spoilage and mark-down	.27	.09	.18
Materials costs	.12	.02	—
Total costs	$ .80	$ .30	$ .31

Increased sales

Shipping-point pre-bagged apples not only were found to be merchandised at less labor, materials and spoilage costs, but also increased the sale of apples. In three markets in which tests were made the retailers sold an average of 12 or 13 lbs. more of pre-bagged apples per day than of bulk. The net result was that pre-bagged apples netted more profit than bulk, even though the pre-bagged apples at that time cost 55 cents a box over the bulk. These *(This article continued on page 188)*

TABLE VII—RETAILER PROFITS MADE GREATER BY SELLING BAGGED APPLES

	Bulk	*3# bags**	*4# bags**
Average sales (pounds)	46.7 lb.	58.4 lb.	59.8 lb.
(dollars)	$ 5.48	$ 7.13	$ 7.66
Dollars			
Original gross margin	$ 1.47	$ 1.52	$ 1.55
Final gross margin	$ 1.08	$ 1.35	$ 1.36
Per cent			
Original gross margin	26.2%	20.0%	21.5%
Final gross margin	19.7%	18.9%	19.3%

* Pre-bagged apples cost 55 cents per box over the bulk. Shipping-point pre-bagged Winesaps with prices and quality the same. Two-week test period.

Here's everything

FRUIT AND PRODUCE

PLIOFILM *super-market bags hold up to 10 pounds of heavy produce without danger of breakage. Fully transparent; all the contents are easily seen. Traffic and sales are speeded up.*

MEATS

PLIOFILM *is puncture- and tear-resistant. Doesn't shatter or run.*

Ideal for irregular or bony cuts. Excellent bloom retention.

you want in a self-service wrap!

LIQUID PACKS

PLIOFILM *safely seals pickles, oysters, sauerkraut in brine, fruits in syrup, and other liquid-pack products—because it's liquid-tight, leakage-proof.*

WHAT do you look for in a packaging film? Strength? Quality protection? Sales appeal? You'll find them all in PLIOFILM—Goodyear's tough moistureproof film.

PLIOFILM is especially suited to modern, self-service selling. That's because its strength permits plenty of rough handling. It has high-dimensional stability—doesn't wrinkle or pucker—makes a neat package whose clear transparency invites quick customer inspection and approval.

PLIOFILM easily heat-seals with an air-, liquid-tight weld and is readily adaptable to automatic packaging machinery. For complete information, write: Goodyear, Pliofilm Dept., Akron 16, Ohio.

GOODYEAR
PACKAGING
FILM

Good things are better in

Pliofilm

3-way protection against air, moisture, liquids

Pliofilm, a rubber hydrochloride—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

Coty's spring promotion of Air Spun powder via a free-lipstick deal is given impact at point of sale by this lithographed window display. Centerpiece is a glamourous blond peering over top of the "Coty Glamour News." The deal news sheet tears off so the display can be used later as a straight Air Spun promotion. Side cards are oversized replicas of the powder boxes and lipstick cases. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

Pepsi Cola's new hanger is a dramatic eye stopper despite the fact that it is built on a single plane without animation or actual third dimension. This lithographed paperboard display achieves the effect of a "spectacular" by the illusion of a gigantic bottle of Pepsi surging out of the surf and out of the frame. Display produced by Einson-Freeman Co., Inc., Long Island City, from a painting by Carl Paulsen.

DISPLAY

Texcel cellophane tape, made by the Industrial Tape Corp., New Brunswick, N. J., is given an impulse-purchase boost through this display merchandiser designed to be hung over the back of cash registers. A metal bead chain attached to the sides of the paperboard unit is adjustable for hanging on any size cash registers. Two dozen of the 25-cent, ¾-in. dispenser rolls fit in the display. It is a throw-away display, requiring no refilling from back-room stocks. Display, Container Corp. of America, Chicago.

With the coming of spring, Pittsburgh Paint Co. has entered into a display campaign consisting of six window displays and eight counter displays, all full-color printed on paperboard. Illustrated at the left is a large two-product window unit promoting Florhide floor enamel and Waterspar all-purpose enamel. The photograph at the right is a counter card that carries the Florhide promotion into the store. The counter unit holds an actual can of Florhide and on both sides of the unit are 11 color swatches of the actual enamel so that the consumer, in making selections, can see the actual shades available in the line. Displays, Hussey-Woodward, Inc., New York.

I. Lewis Cigar Mfg. Co.'s handy pocket cartons of five John Ruskin cigars are packaged in a convenient combination display-shipper. Ten of the cartons, designed to encourage greater unit sales, fit into the display. Both cartons and display are printed by the sheet-fed gravure method of color reproduction. The die-cut riser piece has a spot for price marking. Cartons and display, Robert Gair Co., Inc. New York.

GALLERY

The new Cutex Spillpruf bottle (see *Modern Packaging*, April, 1951, p. 175) brought out by the Northam Warren Corp., is being introduced in this metal display unit that holds all 16 of the Cutex colors. The display is effective in its simplicity of design, with copy held to a minimum. The trade name is prominent in bold lettering at the top. The base simply says "No finer at any price."

A new product—Color-Deks for decorating cakes, cookies, candies and ice cream—put out by the Baker Extract Co., Springfield, Mass., is being marketed in this point-of-sale display unit that shows the five different colors of product to advantage. The five sifter-top shaker jars, re-usable as salt, pepper or sugar shakers, fit into die-cut openings in the base of the merchandiser. Display, Gordon Buffett Co., Boston, Mass. Jars, caps and polyethylene shaker fittings, Owens-Illinois Glass Co., Toledo, Ohio.

STRIKING CONTRAST between front and back panels of old and new Broadcast labels is apparent in close-up of corned-beef-hash label, first to be redesigned. New front panel provides improved identity and appetite appeal. Serving suggestions are strong plus feature for self-service selling.

Yellow

Alert packagers might well borrow a leaf from the book of the seasoned politician, who recognizes the value of periodic contacts with his constituents at the "grass roots" level as a guide to future activities. Illinois Meat Co., Chicago, made profitable use of the same approach recently by giving typical consumers an opportunity to express their preferences when the labels for its well-known Broadcast line of meat products in metal and glass were being redesigned.

Officials of the company, while agreeing that label redesign would be desirable in view of the trend to self-service merchandising in recent years, realized that the present Broadcast label was familiar to millions of customers and had built up a high recognition value during its many years on the market. Accordingly, they felt that the new design, if possible, should include some of the same basic elements, at the same time incorporating increased selling appeal and utility. Another objective of the redesign program was to provide a closer family identity between the entire family of Broadcast products, involving labeled cans, lithographed cans and labeled glass containers.

The redesign program was turned over to an independent package-design organization, with which Illinois Meat officials cooperated closely in outlining the fundamental problems to be overcome. Broadcast brand corned beef hash, top-volume item in the company's variety of products, was selected as the first food for label redesign. Design pattern of the old label was an inverted yellow triangle with a black background and yellow panels. The display face was dominated by the Broadcast name arching across the top, followed by product name in capital and lower-case letters. Beneath this came a vignette illustration showing the product ready to serve. The back panel carried a list of other Broadcast products and unillustrated serving suggestions.

As a basic approach, the designer established a "20-40-40" layout, with 40% of the label area devoted to the front display panel, a like amount to illustrate serving suggestions for the back panel of the label and the remaining 20% containing a list of ingredients, net weight, Department of Agriculture inspection legend and manufacturer's name and address. The inverted triangle was retained, but was changed to black to show off the enlarged photographic illustration to greater advantage. The product name, more prominently emphasized in reverse white capital letters against a black rectangular panel, was shifted to the bottom of the label, improving product recognition on the shelf.

Treatment of the rear 40% panel marked a complete departure from the earlier label. Dominating this part of the label were mouth-watering recipe suggestions in full-color photography, prepared with a view to subtle related selling of other products (example: corned beef hash prepared in a ring mold in combination with canned corn and green peas). The illustrations were separated by a white diagonal panel on which serving suggestions were set forth under two specific headings—"Good for breakfast" and "Good for dinner."

Representatives of Illinois Meat were in accord with these label changes with one important exception. Most of them favored the retention of yellow instead of gold as the background color, since it would help to preserve the recognition value of the old label. There was also a minority preference expressed for white.

At this point, the designers suggested that the problem be turned over to the consumer for a final decision. The printer agreed to make a set of plates three ways, viz.: with the background in gold, in yellow and in white, and to make a press run, with plastic finish, of 2,500 each. The labels were otherwise identical as to layout, lettering and use of full-color illustrations on the two 40% panels. These labels were applied to cans of Broadcast corned beef hash and arrangements were made to sell them in direct competition with cans bearing old ones.

wins again

ILLINOIS MEAT CO.'S 3-DAY SHOPPER POLL SHOWS OVERWHELMING PREFERENCE FOR THE FAMILIAR BACKGROUND COLOR ON NEW LABELS

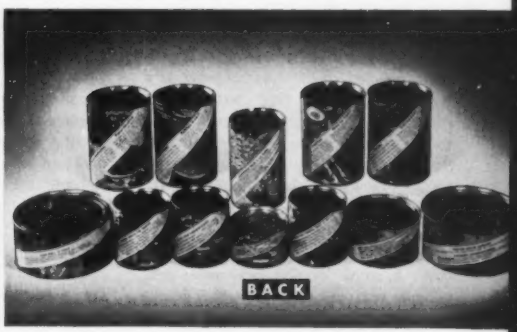
A progressive self-service market in Chicago, considered representative from the standpoint of customer income and related factors, was selected for the unusual label test. The store ran a newspaper ad featuring Broadcast corned beef hash and set up a mass display of the product carrying the four types of labels. Positions of cans were shifted periodically in order to give all labels an equal opportunity for selection. Purchases were tabulated by an attendant who also talked to consumers to learn their reactions to the new label design. Similar tests, without the newspaper advertising and without the periodic shifting of cans, were conducted at three different chain stores. Consumer reactions paralleled those in the independent market.

When results of the three-day poll were reviewed, the yellow and gold backgrounds were virtually tied for consumer favor, far outclassing both the white background and the former Broadcast label. In the course of the test it was found that customers chose the yellow background label even when it was deliberately displayed where it was difficult for the customers to reach.

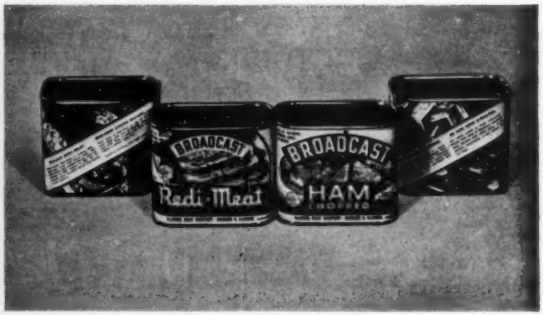
Housewives liked the revised treatment of the display panel and were

IN STORE TEST, conducted in Chicago self-service market, customers stated their preferences and gave reactions to new design, including enlarged product vignettes and illustrated serving suggestions on back panel.

ADAPTATION of new design to the whole line of Broadcast canned meat products shows the greatly improved product identity and the additional appetite appeal gained through the use of larger full-color product illustrations on label.



GLASS-PACKED ITEMS also have new labels tying in with the new design theme. Lithographed metal caps call attention to protection afforded by vacuum pack.



DIFFERENTIATION was made in front-panel design treatment for the 12-oz. lithographed cans used for Broadcast chopped ham and Redi-Meat to prevent possible confusion between two products.

emphatic in their praise for the illustrated serving suggestions on the back panel. While no age group reacted unfavorably to the serving suggestions, the greatest enthusiasm for this new feature was expressed by younger customers who had started housekeeping in recent years and those having grown children who, they felt, would find the information and photographs helpful. Women in the older age group liked the menu suggestions, but indicated they were less likely to follow them because they were used to serving the product in their own ways.

The grocer in whose market the test was conducted summarized some of the basic virtues of the new label when he pointed out how consumer buying habits have changed in recent years. In earlier days, he said, when the customer merely told the clerk which items she wanted, personal scrutiny of the package was rare. But in modern self-service merchandising, the harried shopper, confronted by a vast array of products, wants to make rapid selections and to have specific information as well as the brand name of the product she is buying.

To this end, prominent name labeling is imperative to eliminate possible wrong selections (especially when a dominating trade name is employed) and realistic product illustrations are a welcome shopping aid. Serving suggestions give the package a plus value by making meal preparation easier. With other factors equal, they constitute a strong reason for selecting one brand over another.

As a result of the consumer test, yellow was specified for the background hue on the Broadcast labels. With the corned beef hash label approved as a prototype, Illinois Meat Co. authorized adaptation of the new design to all labels for canned and glass-packed products and to lithographed cans. On the latter containers, a clear-cut differentiation was made between the higher-priced chopped ham and the popular-priced Redi-Meat, a spiced pork product. The glass-container labels, which are die cut in tapered shape to conform to the shape of the jars and tumbler-style packages, employ the same design treatment as the front panel of the can labels, with the color illustration depicting a suggested serving.

The new Broadcast labels are printed by four-color process on high-speed rotary letterpress equipment, using curved electrotypes. The stock is a special run sheet with color, finish, strength and amenability to the finishing operation carefully controlled. Qualities of high specular gloss, abrasion endurance and block resistance are incorporated into the highly decorative and protective surface coating used on the labels. This special finish is baked on the printed sheet at elevated temperatures to insure good adhesion and full development of the inherent characteristics of the applied film. Control of film weight is maintained to assure uniformity of the finished labels. The formulation of the coating material also includes necessary components to impart an amount of "slip" sufficient to permit easy handling of the labels and optimum "machinability" in the labeling operation.

Beginning with the corned beef hash label, Illinois Meat is now introducing the new labels, item by item, as stocks of the former label are exhausted. No formal announcement has been made concerning the change, since customers recognized the new label. Favorable comments from consumers and the trade bear out the results of the store test.

As a sidelight in connection with the label test, consumers were questioned to learn whether they had noted an apparent change in the color of labels and glass-packed merchandise under the type of fluorescent and cold-cathode lighting used in many modern food stores. A few purchasers said catchup and chili sauce did not appear to have the same luscious red they had previously enjoyed. This deception, they said, had been dispelled when they re-viewed the merchandise at home under incandescent lighting. No one questioned had noted a difference in the appearance of can labels.

Carrying the study further, the designers checked labeled cans to determine what effect, if any, store lighting might have on labels which were (1) predominantly red, (2) predominantly yellow and (3) predominantly blue. They concluded that there was no adulteration in clear blues or clear yellows, but that in the case of reds tending toward the cold side, modern store illumination often caused them to appear slightly brown. The warm reds, on the other hand, had no apparent adulteration.

CREDITS: *Label redesign, Leodora Congdon, with color photography by Lea-Tek Studio, Lake Zurich, Ill. Labels, Wheeler-Van Label Co., Grand Rapids, Mich. Cans, Continental Can Co., New York. Glass containers, Anchor Hocking Glass Corp., Lancaster, Ohio. Lithographed metal caps, White Cap Co., Chicago.*

20th NATIONAL PACKAGING CONFERENCE AND EXPOSITION

The National Packaging Conference and Exposition this year proved once again its capacity not only for breaking records, but for exceeding all advance predictions of records to be broken.

The final count of badges issued as the four-day Exposition closed on April 20 indicated an attendance of 16,200. This not only broke all records for an Atlantic City show (the previous peak there was 11,000 in 1949), but it was well ahead of the most optimistic forecast. The American Management Assn., sponsors, had predicted 15,000.

Despite the fact that Atlantic City provides almost no local attendance, the Exposition registration this year was second only to the record 19,000 at Chicago last year. It matched the second biggest total—16,000 at Philadelphia in 1947.

Out-of-town visitors poured into the seashore resort by every train and plane, and many by automobile. Extra sections and cars were operated by the Pennsylvania Railroad from several Midwestern points. Eastern Airlines was forced to provide nine extra flights on Monday.

The record number of 264 exhibitors, occupying 80,000 sq. ft. and filling every corner of the huge Auditorium, found aisles and booths thronged from the opening at noon Tuesday till the closing hour on Friday. Despite the fears of shortages, there was no lack of new things to be shown, in plastics, paper, foil, metal films and the machinery of packaging.

More than 1,000 of the visitors attended one or more of the six sessions of the Packaging Conference. The panel discussion of military packaging requirements alone drew close to 800.

At a meeting of the Exhibitors Advisory Committee it was decided that next year's show will be held at Navy Pier, Chicago, instead of Cleveland as previously planned. On the basis of the 1950 and 1951 attendance figures, it appears that the show has simply outgrown Cleveland's housing accommodations. Cleveland can provide only 3,100 hotel rooms, the exhibitors were told, whereas 4,500 rooms were required this year. In 1953 the show will return to Atlantic City.

Dates for the 1952 Chicago show remain to be settled, but it probably will be the first week in April.

As usual, the 20th annual Exposition was managed by Clapp & Poliak, with the Exposition and Conference program under the general supervision of the AMA staff, including Lawrence A. Appley, president; Coleman Lee Finkel, program director; Alice Smith, acting public relations director, and Paul O. Vogt of the General Electric Co., vice president in charge of AMA's Packaging Division. Robert D. Handley of the Sylvania Division, American Viscose Corp., was chairman of the Exhibitors Advisory Committee and will continue in that post next year.

Following is a summary of discussions at the six Conference sessions:

TUESDAY MORNING

Chairman, PAUL O. VOGT, *Coordinator, General Electric Co., Schenectady, N. Y., and AMA vice president in charge of the Packaging Division.*

Packaging Lessons from the Last War—HENRY W. GADSDEN, *vice president, Sharp & Dohme, Inc., Philadelphia.* It is possible to anticipate probable shortages and to seek alternate packaging specifications, said Mr. Gadsden. The pattern of 1942-43 is already being repeated and therefore last war's experience may have predictive value.

In these alternate specs, don't however leap from the frying pan to the fire. Certain materials, apparently obvious substitutes, are now in adequate supply. Let everyone convert to them, however, and the supply picture may be more acute than with the original material.

Our first attention should be directed to making a fixed amount of material go further through re-analysis of specifications and standard loss allowances. When cellophane quotas were reduced, the Sharp & Dohme staff started scratching. The length of overlap was questioned and led to a reduction which will save 5% of the total cellophane used on the principal package.

Simultaneously a review of salvage procedures is indicated.

We must also avoid pitfalls inherent in faulty purchasing and requisitioning techniques. As a result of the last war's experience, Sharp & Dohme is maintaining up-to-date records of the interrelationship of various component items. Inventories must be kept in balance—bottles are no use without caps to close them.

Many of these imbalances result from excessive addiction to the scare-buying psychology. Injudicious speculation may result in bulging warehouses of substandard material at a time when competition has returned to prewar packaging.

We learned from the last war's experience the desirability of preserving interest in new developments even if these new materials are not immediately available. During wars, the pressure of necessity accelerates research, as witness applications of polyethylene, polystyrene and nylon developed during World War II.

We must spot our bottleneck equipment and determine what is essential to insure operations under all foreseeable contingencies. Spare parts will obviously be stocked when obtainable and alternate methods selected in case of breakdown. Should we not, however, review our preventative maintenance programs? Can't breakdowns be avoided through earlier diagnosis?

Equipment requirements should also be reviewed in light of alternate material specifications and of possible new products.

Those having highly mechanized plants must consider the effect of down-grading of supplies and attempt to establish minimum acceptable standards for machine operations. A desirable further step is to predict probable spoilage when running minimum standard material. In a tight supply market, it may be profitable to switch certain packages from automatic to semi-automatic or manual operations (despite higher unit labor costs) to attain greater production through decreased material spoilage.

Another of last war's lessons was not to postpone ordering needed equipment for fear of obsolescence due to postwar miracle developments. Most machinery manufacturers reconverted to glorified prewar models to avoid the delay in retooling. Radical improvements were introduced many times only after the initial backlog was satisfied and a buyer's market (remember?) threatened. Meanwhile, those who had ordered early were reaping the savings which even the prewar model produced.

And now, how about the employees required to operate this

equipment? They, too, will be scarce. Again, the first step indicated is an analysis of your situation. The most obvious step to be taken is the training of replacements or alternates for key personnel whose status is precarious.

The control of scarce or strategic materials is, however, a federal responsibility. And today that responsibility is not being adequately discharged. Under the existing system of priorities, DO's represent nothing more than hunting licenses. Recent regulation permits assigning a DO number on orders for maintenance, repairs and operating supplies. All companies can issue them and all vendors demand them, so essentially we're right back where we started. No protection is provided for vital civilian supplies. Recently production of hypodermic needles was interrupted due to the inability of the manufacturer to obtain the small amount of brass needed for the hubs.

Basically we're suffering from the newness of this emergency. Most of the Washington control bureaus are well intended but understaffed and still disorganized. Industry can well serve the country and itself by giving sound counsel and guidance to those officials currently struggling to frame new regulations.

Your Package—From Shipping Room to Retail Shelf—DR. JOHN R. WHITAKER, *American Stores Co., Philadelphia.* Although the manufacturers, canners, packers or the processors of goods to be sold at retail are concerned more particularly with the sales aspects of the package and its contents than anything else, almost equal consideration should be given to the cost of physically handling the product from the time it leaves the production or packaging operation till it is in the possession of the ultimate consumer or user. Poorly designed or constructed packages and containers may be the basis of considerable loss and annoyance to the wholesaler and retailer.

The full import of this cost problem cannot be appraised adequately until cost studies are made in considerable detail. Actual merchandise loss might not take place until the retail package reaches the consumer. A study of consumer complaints may reveal the real or inherent weakness of the packaging methods.

Poorly designed packages and containers may not result in actual loss or deterioration of the item being sold due to the extra care which must be exercised in handling. The cost of special handling, however, might well prove to be far in excess of what appeared to be saved by the inadequate packaging of the merchandise or the proper arrangement of the packages in the outer case or container. As an example, rice or pea beans packaged in transparent bags may cause considerable difficulty. Improperly sealed consumer units or loosely packed containers may result in unnecessary loss.

Some cases or containers are too high in proportion to length and width. Merchandise which is packed in this manner becomes top heavy, thus making it difficult to palletize, especially if double tiering of pallets is a normal practice.

Because of the wide use of pallets in handling food and grocery commodities, the problems of proper-sized shipping cases or containers became increasingly important. As a result, representatives of the grocery industry and other interested parties, through the cooperation of the Commodity Standards Division of the National Bureau of Standards discussed the subject of cases and package sizes as they affect the handling and warehousing of grocery commodities on standard pallets. After a series of meetings, W. E. Braithwaite of the Commodity Standards Division of the National Bureau of Standards issued a progress report as of March 31, 1950. The report lists six factors which manufacturers of products should consider:

(a) For ease in handling, no case or container should exceed approximately 50 lbs. in weight.

(b) Case or container height should be less than either the length or width dimensions. The height of a case should not exceed 14 in.

(c) Cases or containers for heavy merchandise such as canned or bottled goods should not be larger than 1 cu. ft. Cases or containers for lighter merchandise, such as cereals, or paper products, should not be larger than approximately 4 cu. ft.

(d) Cases significantly smaller than 1 cu. ft. for merchandise such as baby food, spices, extracts, etc., may be taped, interlocked or fastened together in multiple units not to exceed maximum weights and dimensions herein recommended.

(e) Consideration should be given to the elimination of any void or open space when merchandise is stacked on standard-sized pallets.

(f) The case or container corrugations should be perpendicular (right angles) to the bottom to provide maximum protection and supporting strength.

The fifth basic requirement relates to height of pallet loads and strength of shipping cases or containers, as follows:

(1) Over-all height of a single pallet load should not be more than 72 in., but may be less, depending on the commodity, transportation and warehouse operating problems.

(2) Cases or containers should be strong enough to prevent crushing or case collapse when piled to height of 16 ft.

TUESDAY AFTERNOON

Military Packaging Requirements as They Affect You—*Chairman,* ROGER L. PUTNAM, *president, Package Machinery Co., Springfield, Mass.*

Panel members: COL. JOHN A. WAY, USAF, *chief, Munitions Board, Packaging Div., Office of Procurement Methods, Washington;* WILLIAM D. LONG, USAF, *chief, Packaging Laboratory, Air Materiel Command, Wright Field, Dayton, Ohio;* T. P. WHARTON, *vice chairman, Army Packaging Board, Office, Assistant Chief of Staff, Washington;* C. K. ROYCE, *Head, Packaging Section, Production Policy Div., Office of Naval Material, Washington;* CAPT. C. E. SHAFER, USAF, *Procurement Div., Headquarters, Air Materiel Command, Wright Field, Dayton, Ohio;* LT. COL. R. B. HAMILTON, *QMC, Quartermaster Purchasing Div., New York Quartermaster Procurement Agency;* T. A. JOHNSON, *Packaging and Preservation Technologist, Bureau of Aeronautics, Navy Dept., Washington.*

Col. Way's opening talk outlining general packaging problems of the armed forces was followed by a question and answer period with queries submitted from the floor. Principal topics discussed are summarized below.

New packaging and marking manuals: (Col. Way)—Packaging and marking manuals are now in preparation and will be sold at cost through the Government Printing Office. The packaging manual will probably be released in about 60 days, but there is no estimate at present as to when the marking manual will be issued. These will be basic procedural manuals covering "family groups" of items having similar packaging problems and will supplement the information and references found in bids. The manuals will in no way replace or supersede JAN and MIL specifications now in effect.

Packaging schools: (Col. Way and Mr. Wharton)—The Director of Defense is issuing an order calling for the setting up of packaging schools as required. Arrangements will be made so that industry representatives can attend these schools. A major activity along this line is now set up at the Rossford Ordnance Depot, Toledo, Ohio.

Are packaging engineers needed by the armed forces? (Capt. Shafer, Mr. Royce, Mr. Wharton)—The Navy, Army and USAF are all expanding their packaging activities and need qualified personnel. In the Air Force, packaging activities relating to quality control are being stepped up. In the Army, much of the increased packaging activity is in connection with Ordnance, such as the Rossford Depot program (see above). Further information on the types of personnel needed, salary ranges, etc., may be obtained through procurement field offices.

Sources of detailed information on military packaging: (Col. Way, Lt. Col. Hamilton, Mr. Wharton)—One primary source is the index of specifications available from the Government Printing Office. Further details may be obtained by writing

to Col. Way's office. Specific information is also contained in the invitation to bid and in the contract. When further details are required, contact your procurement office. Packagers should not accept contracts unless sure that all requirements are fully understood and can be met. Packaging must be handled in strict accordance with the contract; any deviations may lead to serious delays and difficulties.

Use of substitute materials: (Capt. Shafer, Lt. Col. Hamilton, Col. Way, Mr. Wharton)—It must be kept in mind that the inspector has little leeway in meeting this problem, unless the substituted material is duly approved as a packaging deviation. In general, the terms of the contract must be strictly met. The contracting officer is the final judge; inspectors must follow the rules. Deviations usually influence the price of the contract and the inspector is not authorized to take any action influencing the contract. When problems of this type arise, the procurement officer should be consulted. The respective services are eager to consider cases of this kind and urge the packager to contact them, but the inspector should not be expected to authorize substitutions.

Difficulties with inspection: (Mr. Long, Mr. Wharton)—In cases where the inspector refuses to approve packaging even though requirements are being met, write to the Inspector General, giving a full explanation. First, however, it is advisable to contact the contracting officer and try to work out the problem through him. One effective method of dealing with this problem is the use of a "conference call" or multiple telephone hook-up which permits direct discussion of the matter and eliminates delays.

Final authority on inspection when subcontractors or other services are involved: (Mr. Wharton)—When an item is requisitioned by one service and purchased for it by another service, responsibility for fulfillment of the contract rests with the prime contractor. The requisitioner states what is required and the contract is drawn upon that basis. The function of the inspector is merely to ascertain whether the terms of the contract are met. When a subcontract is involved, the prime contractor must take the responsibility of getting the packaging requirements fulfilled.

Use of certificates of compliance on Navy contracts: (Mr. Royce)—The Navy has found it necessary to require its own inspectors rather than to rely on certificates of compliance supplied by the vendor. Based on past experience, the Navy has found that in too many instances such certificates could not be relied upon.

Use of ICC Rule 41 as yardstick: (Lt. Col. Hamilton, Mr. Wharton, Mr. Johnson)—This rule is useful as an index of commercial practice, but it must be borne in mind that for military packaging, many special conditions must often be met, necessitating requirements exceeding those set forth in Rule 41. Military packaging must be handled largely on a "prescription" basis, since there are so many levels of protection involved. Another factor complicating the use of Rule 41 as a yardstick is the fact that "commercial practice" in some industries is at a much higher level than in others.

Why do the various military departments have different packaging specifications? (Mr. Royce)—We are conscious of this situation and are working to integrate specs in so far as conditions permit. However, such differences are often justified because of the varying requirements involved. Col. Way's office is working to improve this situation.

What is the P-T system? Is it likely to be adopted for all services? (Capt. Shafer, Mr. Long, Mr. Johnson)—The Packaging Team system is based on the concept of trained packaging personnel meeting with the contractor to work out a package in the contractor's plant. It is being studied by the Air Force, which believes it often meets a specific need. With this system, once a list of approved materials and techniques has been established at one contractor's plant, it can be progressively revised and referenced for use in other plants. One advantage of the system is its flexibility, especially on large contracts where it is difficult for the initiator of procurement to visualize how they are to be handled. Spare parts for aircraft typify the problems that may be met through the P-T system.

How are certificates of necessity handled by the military? (Col. Way)—These are now being handled by NPA, but not too much should be expected of them. If NPA does not feel that a shortage of facilities exists, applications for certificates of necessity will go to the bottom of the pile.

Responsibility in cases involving patents: (Lt. Col. Hamilton)—In working with patented types of packaging materials, it is up to the contractor to obtain the required license status. Every contract has an indemnification clause which absolves Government of all responsibility in such instances.

Standard preservation and packaging list: (Mr. Royce, Mr. Wharton)—Such standard lists have been made available to USAF contractors. The Navy is also expected to take similar action. The Army is planning to adhere to its present system of specifications and procedural specifications.

What is the outlook on polyethylene? (Col. Way)—At the present time, polyethylene is not being stock piled for military coating and packaging applications. Stock piling is being used only for those materials not of domestic manufacture, which might be cut off by potential military developments. The military forces believe that there will be sufficient supplies of polyethylene available to meet projected military requirements, although the prospects for civilian applications are not optimistic. If supplies for military use should prove inadequate, the armed forces contemplate expanded production or the use of substitute materials.

What is the situation on use of VPI materials? (Mr. Johnson, Mr. Long)—A specification has been drawn up covering volatile-type corrosion inhibitors and will probably be available about the middle of May (MIL P 3420). Research has shown that these materials may be successfully used on clean ferrous metals, but they are still in the pilot-plant stage and have not been given universal acceptance. The Air Force is investigating these materials, but feels that each application must be judged on its own merits.

Is any gauge of polyethylene film approved as a barrier material under ANB-20? (Mr. Long)—Not as an unsupported film, but polyethylene is accepted as a component in approved barrier materials.

Can adhesive bonded veneer compete with heavy-duty lumber for crating applications? (Mr. Long)—Indications are that it can do so successfully. We expect to see a wider use of the material for such uses in the near future.

Are there any Air Force specifications on a single-faced type of cushioning material? (Mr. Long)—Not at present, but the question of such specs is now being studied and the other services are also interested in the possible use of such material.

Is the use of plain aluminum foil approved for some items? (Mr. Johnson)—Yes, when used with a drug-store-style wrap followed by a dip to keep the package sealed.

What about vacuum or inert packing in sealed containers? (Mr. Johnson)—Such packages are being investigated, but there are difficulties, such as the moisture problem when packaging in inert gas. Another complicating factor is that the necessary equipment is not available in sufficient quantity to handle volume requirements.

WEDNESDAY MORNING

How Three Companies Are Solving Their Packaging Problems—*Chairman,* R. C. Reed, *secretary, Package Committee, The Texas Co., New York.*

Increasing Packaging Efficiency Through Coordinated Action—Sam E. Noble, *vice president—production, The Chattanooga Medicine Co., Chattanooga, Tenn.* To expound the theory that efficient packaging depends upon a carefully thought out plan

in which no part may be changed is not only impractical in application but denies the opportunities afforded by a more flexible approach.

For some 86 years our company has manufactured and marketed a powdered, vegetable laxative. The Black Draught package has been almost a family tradition in the South and Southwest for over three-quarters of a century. During the course of these many years we have added new forms of the original powdered product. As of this time last year, this item was sold in powdered, granulated and syrup form. We had developed a family of products—all similar in action, name, trademark and package design. These identifying family traits naturally became invaluable. About a year ago our management felt that, in answer to well-established merchandising trends, Black Draught Tablets should be introduced. It was our objective to present a new package as nearly identical to the well-established, original family remedy package, package-wise, as possible so that the same acceptance and sales cooperation would be afforded the new item as was enjoyed by the old.

Our first consideration was the tablet size. This, too, had to conform dosage-wise to the pattern established by the older Black Draught powder.

This done, we turned to the carton size. In packaging tablets, the smallest width of the carton opening should always be greater than the longest axis of the tablet. We had developed a 7/16-in. tablet; therefore it was decided that the narrower width of the carton would be 9/16 in. or ½ in. A second dimension of the tablet carton was taken from the parent powder package to assure identity between the product family and its new member. With one dimension identical, both tablet and powder packages could be stacked together evenly and dispensed from the same dispenser. The third and final dimension was determined by our decision to package 36 tablets in each carton. The carton was simply made long enough to accommodate easily this number of tablets. Artwork for the new tablet package presented no problem—we merely duplicated as nearly as possible that appearing on the powder package. Mechanically, the carton itself was of simple design—one end glued, the other tucked. It was cellophane overwrapped.

First reports from our test effort indicated good acceptance of the tablet idea, but it uncovered one distressing fact package-wise. The uncoated tablet, while not soft or particularly friable, did dust a little in shipping and as the carton was a tuck-in, with the imperfect closure that this provides, the dust from the tablets, while escaping from the carton, was confined to the package under the transparent overwrap. Our first carton incorporated considerable black solids in its printing and the light brown dust from the tablets, confined to the package by the wrap, was unsightly and produced a poor appearance in too many instances. Accordingly, laboratory technicians developed a smaller, harder tablet that would not dust to the same extent as had the first tablet.

At this juncture, the advertising department suggested that a departure from the conventional would not be amiss.

In the light of these suggestions, the original objective of producing a package nearly identical with the powder package was modified. While the original colors and the name were retained, the trademark was relegated to a considerably less important position and for the first time a striped rather than a solid background was authorized. By doing away with the major portion of the solid blacks and by introducing the striped background, the dusting, while not entirely eliminated by the new tablet, would not be as readily apparent as previously.

The over-all printing of the carton was considerably lightened up, the mass of black areas was appreciably reduced and the present package successfully minimizes the disagreeable appearance caused by the confined dusting.

At the same time that this design was up for consideration, a study of the minimum board weight or caliper was under way. Too many times, it seems to me, cartons are purchased with little thought given to their selection from the standpoint of minimum weight requirements. The inevitable result is a tonnage waste of board.

At the time that Black Draught Tablets were being made ready for the market it seemed logical to utilize still further, if possible, the already established acceptance of one of the other items in the line to further the publicity on the new item. To this end a back panel was worked out for application to our Syrup of Black Draught. The label publicizing the new tablet was originally produced in one color on an orange-yellow plate label, run 42 to a sheet 20 by 25, or 21,000 to the ream.

Following the changes in the carton previously illustrated, we felt that a better effect could be had by the use of a two-color label, in effect a facsimile of the new package.

We found that by using a white label stock of the same grade and size as the old orange-yellow and by reducing the size of the label slightly and a re-arrangement of the label, we could obtain 72 labels per sheet, or 36,000 to the ream, an increase of over 50%, with, we felt, no loss of display value.

I wish to re-emphasize the fact which seems so ably illustrated by the story of Black Draught Tablet packaging. It must be remembered that we produced a carton in fulfillment of our original objectives, but we allowed our thinking to be flexible and consequently ended up with a vastly superior package job, as well as a better tablet.

Designing the Package as Part of the Product—CHARLES D. MATTINGLY, *packaging engineer The Coleman Co., Inc., Wichita, Kan.* Analytical package engineering is not new, said Mr. Mattingly. The application of this plan to package engineering, however, has enabled us to uncover so many unnecessary packaging costs that we believe our method of analytical package engineering to be a fresh approach.

The application of analytical package engineering questions every detail; namely, *why, what, where, when, who, how.*

Our plan is the detailed operation of learning all of the manufacturing operations, all of the assembling operations and all of the various types of material purchased and used in the protection of our products. *We are looking for facts.*

We first made detailed drawings of each prime unit of purchased packaging material. Second, we made charts of all of the packaging material used on each and every product. Third, we made cost records of each and every prime unit part, which gave us over a period of years an idea of what packaging material should cost from all sources, as well as an idea of what fluctuating costs will do to the total packaging cost. Fourth, we try to take advantage of every opportunity, such as this fine AMA packaging show, to learn of the many possible ways to use packaging materials. In material, machines and equipment our source of information is mainly gained by never being too busy to listen to salesmen and representatives of companies selling material, machines and equipment, or to read the trade publications and technical bulletins in this business. Fifth, we set up preproving performance tests similar to those recommended by the National Safe Transit Committee. We purchased some and built other equipment and machines necessary to run these performance tests.

On each product, therefore, we had a breakdown of the packaging job, with a list of all of the details of packaging before us.

The value of this system of analytical package engineering has benefited us both directly and indirectly in each of the following: In one of our first studies we discovered a case where two pads, valued at three cents each, were in the package set-up, although their original use and intended purpose had long been obsoleted by design changes in the product.

We saved two cents each on a draft-meter package by changing to a 125-lb.-test corrugated box instead of a 200-lb.-test box as had been used in the past. The more expensive 200-lb.-test box was obviously not necessary since these draft meters were only shipped with and inside a crated furnace. Though

only a slight detail, one production run of 20,000 furnaces saved us $400.

Three years ago we began to question the details and functional use of the packaging materials used in our floor furnaces. We came up with a simple diagonally wire-stressed crate frame. Formerly we had been using a fully enclosed cleated corrugated crate. The new method offered us a saving of nearly a dollar a furnace compared to the former method. Since we manufacture over 300 of these furnaces daily, the possible saving involved was our greatest asset in selling this new method to management and we have had fewer shipping complaints.

Lately, where possible, we have been using automatic glue machines and quite a few automatic stapling devices. Our present records show that the adoption of these faster sealing methods are amounting to savings in sealing material and labor of over $25 per day.

All suppliers quote packaging costs and give valued laboratory assistance with variance to each manufacturer. It has been our experience that the prices quoted are on a narrow margin of profit and the assistance given is more efficient when it is seen that the purchasing department knows of all of the details involved in the packaging cost.

It was found that for very little additional cost we could obtain a better-designed carton with more sales appeal for our high-production camp stoves. With sales department approval, we used these cartons for the next two production runs. Our regular source of supply, realizing they had competition, reviewed their own sources of supply and manufacturing processes, and found that they could supply the camp-stove cartons to us at a reduction of over five cents each from the original cost. After reviewing all the factors, our sales department decided on the less-expensive carton, since it saved us approximately $5,000 a year.

Developing Flexibility in Your Packaging Operations—C. E. SHERWOOD, *industrial engineer, S. C. Johnson & Son, Inc., Racine, Wis.* To a considerable extent we maintain the family resemblance of packages, said Mr. Sherwood. Long use of the same combination of colors brings quick association of the package and Johnson's Wax. Family resemblance, however, can be carried too far.

Shortly after the last war we brought out a laundry aid, a water and stain repellent called Drax, in a glass jar. Our old-line product, Paste Wax, was also in glass at the time. The familiar yellow, red, and black labels adorned both jars and the name Drax, evolved to associate with wax, did such an effective job of association that the two products were often side by side on the shelf and quite a few consumers found themselves preparing to wax their floors with a viscous, white liquid that bore no resemblance to the familiar Paste Wax. As the number of products in a line increases, the continuation of the family resemblance must be weighed carefully, or confusion is apt to result.

Flexibility in production is attained by standardizing on equipment as much as possible. The resulting interchangeability of parts for glass and tin, and for various sizes of containers, provides considerable flexibility from the start. The more fully automatic a line becomes the more difficult it is to provide flexibility. The need for this flexibility must be balanced against the cost reduction to be achieved through the maximum in automatic operation.

On our fastest lines, running 165 pints per minute, we had a productivity of 650 units per manhour in the period immediately after the last war. This corresponded to 12 operators on a line. These same lines now operate with six people at a productivity of 1,300 units per manhour. On the lines where we can sacrifice some flexibility we are now working to bring this productivity to 2,900, or three operators on a line.

In methods-improvement work on our packaging lines we concentrated first on the operations with the lowest labor productivity. The largest single factor in improving our packaging productivity since the last war has been the use of case loaders and end-opening cases for oblong cans.

One of the main requirements of our packaging program, from planning to production, is that it be geared so that new products may be introduced quickly and effectively. For some years our laboratories had been working toward an improved auto polish. After an extended testing period, Research and Development released, on Dec. 15, 1949, a new product that had great promise. The spring season was not far off, so timing was extremely important.

Work on package selection started immediately in the Marketing Division. The product would sell to a large extent through automobile service stations and because of its use in the automotive field it was desirable to package it in tin. It was decided that it would fit well in the existing family of products, so the package resemblance was to be maintained. The type of package was now decided, but the size was yet to be determined.

By this time the name Car Plate had been selected and we had determined that we could produce and market a 10-oz. can at $1, a price that fitted into the automotive trade. Production had not handled this same size before, but it had handled cans of the same base dimensions so that parts were on hand and there would be no delay getting into production.

To test the package size, pricing, introductory advertising and the label itself, 2,000 cases of the product were in the chosen test market, San Diego, by Jan. 10. The time factor precluded lithographed cans, so wrap-around paper labels were applied by hand. A crew of salesmen moved into San Diego and got complete distribution within the limits of the test-market area. As a result of this test the package size and price were confirmed, but the label was changed to include a diamond symbol to give the feeling of hardness and the feeling that the package did not contain just another auto wax. In all, the label was changed three times in four months after the first introduction of the product. These subsequent changes primarily involved the back panel.

As I mentioned before, 2,000 cases of the product were in San Diego Jan. 10. Advertising broke in the area Feb. 14 and four weeks later confirmation was complete for national distribution. Full-scale production, with lithographed cans, began March 16 and selling on a nation-wide basis was under way April 1.

WEDNESDAY AFTERNOON

THE PACKAGING MATERIAL PICTURE—PRESENT AND FUTURE—*Panel discussion.—Chairman,* A. DOUGLAS MURPHY, *packaging coordinator, Standard Oil Co. of New Jersey, New York.*

Closures—GORDON M. SHIMER, *purchasing agent, container materials, E. R. Squibb & Sons, Inc., New York.* The closure industry had a 1950 production record of approximately 14¾ billion units, excluding crowns, Mr. Shimer said. We can expect it will do equally well in 1951, for based on its production rate in the last six months of 1950 it could produce over 16 billion units, surpassing its record year of 1946. The industry's productive capacity has been steadily increasing since 1941 and is capable now of handling any presently anticipated demands.

Metal closures are in good supply, deliveries ranging from 60 to 120 days. Steel manufacturers have indicated that they do not anticipate a shortage of steel for closures. Tinplate will be adequate, provided tin is made available to manufacturers by the NPA. Added capacity is expected for tinplate, so that by 1953 it should be 15% greater than in 1950.

Although aluminum production is high, aluminum is in short supply and has been restricted by order M-7 to 65% of average use of a six month base period, ending June 30, 1950. Restrictions have been made in the use of aluminum for closures.

Plastic closures, with the exception of urea closures, are very

tight. Urea is available on a 90- to 120-day basis. An additional producer should come into full production before the end of the year.

As for rubber, NPA has allotted sufficient, up to the present time, to take care of requirements of the drug industry, but it is possible that cutbacks may be made in the future. Paper closures are still available as required for the milk industry, according to all current reports, and quality is still being maintained.

There is a critical shortage of cork in Spain and Portugal, and worldwide bidding, which was not present during World War II, has caused a tremendous rise in price. This has caused a serious situation which may well continue for several years.

The liner situation has several low spots. Some varnishes are scarce and substitutions may have to be made. Paper for varnish coating is also in short supply. Vinyl is limited and is being allocated, but may be more plentiful in mid-summer.

As for substitutions, a search for satisfactory material from which substitute closures can be made is a difficult one. As many substitutes will necessitate testing in advance, I suggest that these tests begin as soon as you foresee shortage of liner or closure materials you are using at the present.

Film—Al B. Clunan, *chief, Plastic Container Section, Container Division, National Production Authority, Washington.* In addition to the two present producers of cellophane, DuPont and Sylvania, there soon will be a third—Olin Industries, Mr. Clunan said. Sylvania is building new capacity that will add 40% to their 1950 output by the end of this year. Olin's new plant is scheduled to start commercial production in the third quarter of this year and will have an ultimate capacity of 30 to 35 million pounds annually. These two factors will provide an increase in total cellophane-producing capacity of something over 20%, a part of which will be available during the latter half of this year.

Acetate is produced principally by three companies, Celanese, DuPont and Eastman. Here the present planned expansion, mainly by Celanese, will increase the over-all output in 1951 over 1950 by approximately 70%. In addition, a further expansion in 1952 will increase the production by nearly 200% over 1950. This applies only to films 0.003 and under in gauge.

The basic raw material of polyethylene, "flake," is produced by two companies—the Bakelite Div. of Union Carbide and DuPont. Planned increases in "flake" production amount to approximately 40% for 1951 and 120% for 1952 over 1950.

The present polyethylene film-making and bottle-making capacity appears to be adequate to convert all the flake that will be available for these purposes. The present broad indications are that packaging in films and bottles for military and essential civilian uses will require 50% of the flake production this year and possibly 60% in 1952.

Another important packaging plastic is Pliofilm, produced only by Goodyear. Due to the restriction on the use of natural rubber, no further expansion is presently contemplated for Pliofilm.

Saran, Visten and Cryovac, produced by Dow, Visking and Dewey & Almy, respectively, are manufactured from vinylidene chloride. The latter two companies obtain their basic polymer from Dow. Here the expansion program contemplated provides for increases of 150% in 1951 and 400% in 1952 over 1950.

Foil and Metal Containers—Raymond A. Norris, *acting chief, Metal Container Section, Containers Div., National Production Authority, Washington.* Were there sufficient steel and aluminum foil available, Mr. Norris said, I believe in 1951 we could conveniently use about 6,000,000 tons of steel and 12,000,000 lbs. of aluminum in thicknesses of 0.005 and lighter.

The immediate outlook for light-weight cans, steel shipping containers and metal strapping appears to be increasing tightness of supply because of metals shortage; but I believe that "essential" needs will be met.

Defense orders and stock-pile requirements for aluminum foil are presently taking something like 80% of all of this basic material currently being produced. Facilities for increased aluminum production have been given the green light. Present production facilities for foil are ample, if the basic aluminum were available. During the first quarter of 1951 about 9 million pounds of aluminum foil were produced each month, 1 million pounds of which were used in packaging.

During the second quarter of 1951, however, there will probably be a decided reduction in the amount of foil which will be available for packaging material, due to the increasing demands for aluminum in all forms and shapes for defense.

Glass—Victor L. Hall, *general manager, Glass Containers Manufacturers Institute, Inc., New York.* According to Mr. Hall, peak production of glass containers was reached during 1946, at which time the industry turned out 116 million gross of all types of glass containers. Since that time the new facilities added, plus the technological improvements, put the potential capacity substantially above that figure. Inasmuch as 1950 production was 106 million gross, the industry entered this present emergency period of increasing demand with a substantial cushion of unused capacity.

For the first two months of this year production was 19.5 million gross, or at a mathematical annual rate of 117 million gross. However, this two-month period is in no sense a true measure of the year's output. During the winter months the year's furnace-rebuilding program is carried out in order to have full facilities in operation during the period of greatest demand, which is the spring and summer months. The industry, therefore, has not as yet hit its full swing and production can be expected to increase during the next few months.

Paper—Thomas J. Burke, *secretary-treasurer, Sulphite Paper Manufacturers Assn., Inc., and secretary-treasurer, Glassine & Greaseproof Manufacturers Assn., Inc., New York.* Total production of unbleached kraft papers is now about 12% greater than last year, Mr. Burke reported. It is true there was a decline of nearly 20% in the production of unbleached kraft wrapping paper from 102,000 tons in the first quarter of 1950 to 85,000 tons this year, but this was largely due to increased production of bag and sack papers, which increased approximately 30%.

Sanitary food board containers of all types consume nearly 600,000 tons yearly and the prospects for future supply are good inasmuch as productive capacity will be increased from 3 to 5% this year.

Production of all commercial and industrial tissue grades, including fruit and vegetable wraps, twisting tissue, creping, pattern, etc., as well as wrapping tissues, approached 200,000 tons in 1950. It is difficult to state what the prospects are for future supply. Capacity is being increased to an extent which under ordinary conditions would be more than sufficient to meet the average normal yearly increase in consumption.

Production of sulphite and bleached kraft wrapping and converting papers totals approximately 600,000 tons annually. Over 200,000 tons are waxed for use in bakery products of all types, while another 180,000 to 200,000 tons are used for wrapping and packing all types of meat products. As in the case of all types of paper, future production will be good provided we can get pulp.

Production of glassine and greaseproof papers exceeded 130,000 tons in 1950, which represented an increase of approximately 17% over 1949. I believe that the supply will be sufficient to meet defense requirements as well as future essential civilian requirements provided, of course, there is no sharp upturn in demand from the armed forces. The production of vegetable parchment in 1950 totaled about 33,000 tons, which represented an increase of approximately 16% over 1949. Remarks made relative to the future supply of glassine and greaseproof papers apply also to vegetable parchment.

Paperboard—Stuart T. Edgerton, *division purchasing agent, United States Rubber Co., New York.* If there was to be an

eight-million-man defense force that had to be clothed and fed and bedded down, Mr. Edgerton said, then you would have a tremendous need for paperboard. If we do not have to get over the hill of supplying packaging supplies for a tremendous defense force, the picture is one of a long-term high production and consumption of paperboard—stationary for the time being, but liable to move quite suddenly because of changes in consumer reactions.

If war does not come and people are lulled into a feeling of complacency, you could have a surplus of board because there probably would be no more scare buying, or if people earned lots of money and decided to spend it any way, you could have a resurgence of consumer spending which would probably mean a continued scarcity of board.

I don't believe there is a satisfactory economical substitute for the paperboard carton unless you want to eliminate the carton and pack your goods in a shipping container.

The supply of paperboard cartons has been stretched before to cover the most essential needs and I am sure that manufacturers, distributors and buyers working together can do it in this present emergency.

Wood—NATHAN TUFTS, *director, National Wooden Box Assn., vice president–general manager, New England Box Co., Greenland, Mass.* In the early part of 1950 lack of demand and orders, and the threat of inflation, caused reduction in inventories, Mr. Tufts pointed out. Wooden-container manufacturers are still experiencing the headaches of attempting to rebuild, above normal, inventories required to meet a rather unpredictable volume. Beginning in June and July of 1951 a considerable improvement is indicated. It has taken time.

It can be freely stated that the future is hopeful. The injustices of a crazy market in a topsy-turvy world has about run its course. Those who require raw materials for contract production have met the situation, have found new ways to accomplish their purpose and are wiggling out of a predicament. Inventories have begun to improve, uses are approaching a point of balance, labor is happier and, as always happens, the law of supply and demand is leveling off price differences.

These natural events will better correct the shortages that have existed than will the use of substitutes or a switch to illogical packages, because the container field in its diversified production has seemed to share equally in the burdens of the problems we have been discussing. No one package has seemed capable of a better-than-usual price position.

Adhesives—KENYON LOOMIS, *industry consultant, Adhesives Manufacturers Assn. of America, New York.* Some basic raw materials are tight and will continue to be so; to a minor degree, there will be some shifting from one type of adhesive to another, or to alternative adhesives; but, over all, the adhesives supply should keep pace with the packaging demand, both civilian and military, Mr. Loomis said. He discussed the supply picture for the different types of adhesives.

Dextrine adhesives. The principal base materials are corn, tapioca and potato. Tapioca and potato are in good supply and although there has been heavy demand for and limited supply of corn dextrines, no adhesives manufacturer should curtail production because of the lack of corn dextrines. Thus, in this major classification of adhesives, the supply picture is good and encouraging.

Animal glues. Prices have increased generally on all animal glues and plasticisers. Supplies are stiffening and shipments may be delayed a little longer than usual, but there is no need to be alarmed by any talk of shortages on these items.

Resin emulsion adhesives are becoming more and more important to the packaging industry, primarily because of their fast-setting and water-resistant properties. Since World War II there has been a substantial shift from dextrin-base adhesives to resin-base adhesives. Resin materials have been in critically short supply for the last five months and will continue to be so until new plant production increases. If production progressively improves, resin-emulsion adhesives should reach normal supply by summer; if production breaks down, then it is anticipated that both polyvinyl alcohol and polyvinyl acetate, the two most important raw materials, may come under NPA allocation, with the result of resin emulsion adhesives being supplied to the more essential packaging uses only.

Pastes. We have experienced no shortages in pastes and anticipate none, except possibly in those products which contain solvents or plasticizers to assist them in cutting varnishes or pyroxylin. Solvents and plasticizers are in somewhat tight supply at the present time.

Lacquer adhesives. A few years ago, emulsions replaced lacquers in many operations. Convenience was the main reason for this change. The trend is now reversed because of the resin emulsion supply situation. While some lacquers are also tied up in raw-material shortages, many are available. These should be looked into by the cellulose film converters for bags, window work and lamination.

THURSDAY MORNING (Concurrent Session)

PACKAGING MANAGEMENT PROBLEMS TODAY—*Chairman,* JOHN A. WARREN, *packaging consultant, American Home Products Corp., New York.*

A New Approach to Training Packaging Personnel—COL. S. W. MCILWAIN, *commanding officer, The Rossford Ordnance Depot, Toledo, Ohio.* On Nov. 3, 1948, the Chief of Ordnance addressed a letter to the Automotive Manufacturers Assn., requesting assistance in the development of recommendations to serve as a basis for a course of training in preservation, packaging and packing. Soon a group of task committees from among the association and Ordnance personnel was named and given assignments to develop recommendations for courses on the various phases of packaging. These specialists, working in conjunction with Forest Products Laboratory personnel, developed recommendations based on existing military packaging specifications as well as on the latest techniques developed by industry. These recommendations covered the following subjects: cleaning, preservation, unit packaging, final packing, identification, inspection, control and materials.

As a result of the study by the task committee, it was decided that a model packaging line should be established at the Rossford Ordnance Depot to serve as a vital training agency.

By Feb., 1950, all plans were completed for the establishment of the model packaging line and the Chief of Ordnance gave the "green light" for the purchase of the equipment recommended by the task committee. Well in excess of one hundred thousand dollars worth of packaging equipment was procured and installed at Rossford. This included such specialized items as complete conveyor system, power and gravity roller, as well as slat and mesh belt units, a monorail system with hoist, special agitator dip tank for cleaning and preserving, infra-red ray drying ovens and automatic spraying and drying machine for applying of preservative liquids, honing cabinets, special wrapping tables and posture chairs, specially designed heat sealers, the latest in identification equipment, etc.

Training sessions in the Ordnance Packaging Training Course began in Oct., 1950. Fifty-three persons were enrolled in this first class with various services of the Army, the Navy, the Air Forces and AMA representatives being in attendance. The course itself is of two weeks' duration with half the time being devoted to classroom lectures, demonstrations, movies, etc., while the other half is devoted to on-the-job training on the model packaging line.

Each trainee attending the course is presented with an adequate set of applicable packaging specifications, a sample kit of the various preservatives and solvents used and a sample booklet containing the various types of wrapping and cushioning mate-

rials used. The course emphasizes the use and interpretations of military specifications and much time is spent in developing skill in handling specifications.

At the present time the course is being given to persons on the foreman or supervisory level engaged in packaging and inspection of packaging activities. It is the aim of the course to enable these persons to do a better job on their present assignments and also to provide a large reservoir of persons having a general knowledge and skill in packaging, who will speak the same language.

A small but adequate laboratory is available at Rossford and is used in connection with the training activity to show methods of conducting tests on packaging materials, results of various weather conditions on material, etc.

Because of the heavy demand for this training, plans are presently being carried out to increase our facilities in order to make this training available to a larger number of persons.

Maximum Use of Packaging Equipment with Proper Maintenance—E. J. CAPSTACK, *packaging engineer, Joseph E. Seagram & Sons, Inc., Louisville, Ky.* The basic problems facing all of us in our efforts to achieve maximum use from our packaging equipment, Mr. Capstack stated, are the standardization of supplies to maintain flexibility and permit quality operation. We face the improvement of maintenance methods and gadgets to keep machines in operation, the adaptation of old machines or the installation of new equipment to meet our changing requirements and the selection and training of operators and maintenance personnel.

The more we mechanize, the more we reduce the flexibility of an operation. When you plan new machine installations, study your package designs and the machine requirements closely and discuss them in detail with the manufacturer. Wherever possible, revise the package to permit better machine performance and, if practical, standardize portions of them to permit simple machine change-overs. For example, we run a pint and half-pint package on one of our lines. We are currently attempting to obtain the identical necks on both of these bottles to permit either one to be run through our Federal stamp machine without changing the pressing head. We have completely standardized the height, diameter and spotting bar location on our round quart and fifth packages to eliminate several machine change-overs. In several instances we use the same size labels on various bottles and we are constantly striving to extend this flexibility. We have prepared standard drawings for all of our supplies to insure uniformity from various vendors. All supply changes are routed through the engineering office for screening and approval. At this time standard drawings are revised if necessary.

Regarding the machines to be used, we have found it advantageous to keep the number of different types of the same machines to a minimum in any one plant, but to work always with more than one manufacturer. In this way you can increase your flexibility, reduce your spare parts inventory, simplify your training and maintenance difficulties and still keep a broad approach to your problems.

In our work with the machines, we have tried to develop means of making adjustments to the machines without stopping them. We have improved the bottle handling into many of our machines and find that this eliminates a tremendous amount of breakage and reduces the attention required by the operator. We firmly believe in the use of ample safety devices on our machines to protect them from damage. You can simplify maintenance work tremendously simply by standardizing on the types of screws and bolts used on machines to minimize the number of tools a mechanic requires. We are working on methods to simplify our change-overs and find the use of color codes for certain parts to be very useful. The use of gauges has speeded our set-up time and we obtain much better start-ups on the lines. With new men we have found the use of check sheets to be advantageous. One of our prime maintenance requisites is the use of pre-assembled parts for repair, and essential pieces are kept near at hand for immediate use. Worn parts are repaired in most instances and on inaccessible parts we use hardened inserts to permit repair without disassembly.

A big part in any maintenance program is the proper supply of spare parts. We have set up a maximum and minimum inventory of essential parts for all our machines based on past experience and delivery. This is highly recommended now when most parts require from three to six months for delivery with no improvement in sight in the near future.

Organizing for Packaging Material and Equipment Shortages—STANLEY W. BURNHAM, *director of purchases, Lehn & Fink Products Corp.*, New York. First, you must have a top management that is conscious that there is an emergency, Mr. Burnham pointed out. Your top "brass" must be convinced that the Government really means to build lots of tanks, airplanes, guns and other military apparatus. Much doubt does exist in the minds of management.

The next step is to evaluate the situation. Get your inventory figures—finished goods, plus container inventory, plus raw materials, your sales records and your sales forecast. You will then know when your new package must be ready to ship.

Next call a meeting. Production, sales, advertising, purchasing, package engineering, research and management should all be represented by the top man in each category. Throw the facts on the table. You have to decide on a new package by "X" date and right now you haven't any answer. What ideas do they have! While we are changing, should we make the package smaller, larger—entirely different in shape, change the color scheme or facial design? What materials does the purchasing agent believe will be the least critical? What equipment do we have which is not now running full blast?

Armed with this information your merchandise manager, or purchasing agent, or packaging engineer, depending upon your individual company, should be given the assignment of reporting back to this group at a specified time with his final recommendations. These recommendations should be in finished dummy form, so that the sales department, advertising and management can see exactly what they are going to get. To present such a group with just one recommendation is to court complete failure. We all resent being told that "Here it is—take it or leave it." We prefer to make a choice. Complete cost data must be available and should be given in full to this group.

Out of this meeting should come a decision and the chairman should insist on a decision, unless the group simply cannot agree.

Immediately following this meeting, in which we have made a final decision on the new package, call another group together. The following should logically be present: works manager, plant manager and assistant, chief engineer, chief of inspection or control, planning department manager, packaging engineer, time-study engineer and purchasing agent. At this meeting the approved package is shown and all are advised of the quantities to be produced, expected starting time for production and rate of production needed. All details concerning the package are explained. Each production man should have an opportunity to point out what possible difficulties he may encounter.

Following this meeting a detailed memorandum should be issued to all departments that may be affected in any way, stating that the decision has been made. Give the expected production time and quantity and outline the steps which must be taken by each department involved in order to be sure that the package will not run into any last-minute snag.

If alterations to packaging equipment are necessary, recommendations for such expenditures should follow normal channels for approval by management. Since management is already familiar with and has approved the package, there should not be any delay involved.

Normally, such a program can and will be followed through regular channels without further need for meetings of all in-

dividuals involved. However, the individual who was first designated to "carry the ball" in developing the new package—merchandise manager, director of purchases or packaging engineer—should be responsible for periodic checking on the progress of the departments involved to make sure that no portion of the work involved is allowed to bog down.

As your "D" day for this new package moves closer, alert your inspection department to check on first deliveries of materials and assemble a complete package at the earliest opportunity, including shelf container and shipping case. Don't wait until the production line is ready to run. If something is wrong, you want to find it out as early as possible. Present a finished package to each of the executives who served on your original committee of decision, *within an hour*, if possible, of the time your actual production starts. Get them to give you their okay on the unit as being produced.

THURSDAY MORNING (Concurrent Session)

IMPORTANT DEVELOPMENTS IN PACKAGING MATERIALS AND TECHNIQUES—*Chairman*, W. R. HUMMEL, *methods and results supervisor, Western Electric Co., Kearny, N. J.*

New Packaging Materials—Characteristics and Use—ROBERT DE S. COUCH, *head, packaging research, General Foods Corp., Hoboken, N. J.* The development of new materials has been taking place at a steadily increasing rate since the last war. Often there is insufficient time properly to evaluate a new film before another appears that might take its place. The tempo of this fluid condition is accelerated by the never-ending modification of existing materials to provide new qualities.

(Mr. Couch presented a chart of seven different packaging materials, giving the characteristics of each, and in his talk discussed each separately.)

The first material listed is "Sara Pak 1" produced by the H. P. Smith Paper Co. It is a saran-coated kraft paper. The initial evaluation tests indicate it has most of the desirable properties of a saran film without requiring special packaging and sealing equipment. The properties built into the film depend upon the weight of paper used and the thickness of the film. Although mil for mil it is not quite so low in its moisture transmission rate as the unsupported film, it is extremely low for a coated kraft paper. The material is also an excellent grease barrier.

Another combination produced by H. P. Smith is a lamination of polyethylene-coated aluminum foil and scrim. This material is being used currently for some Quartermaster ration packages.

The "Hi-Gloss" Snopaque glassine-foil lamination is a good example of a new combination of old standbys. The lamination provides an excellent appearance and good moisture protection. However, in this instance the only real moisture barrier in the sheet is the foil and when it is creased it loses a great many of its protective qualities.

A new material still in the experimental stage is a combination of pouch stock laminated to aluminum foil which has been coated with a half mil of polyethylene. Since it is only coated on one side, it will not run on every type of machine.

You are undoubtedly acquainted with the Reyseal series of laminated materials incorporating aluminum foil made by the Reynolds Metal Co. The Benj. C. Betner Co. is producing a similar series of laminations and they should be studied to determine where they fit into the packaging picture.

In addition to the foil variety of laminated film, the Betner company is producing an all-paper combination. This can be put together in almost a dozen different combinations, depending upon the characteristics desired in the finished sheet. This combination provides good moisture protection and the strength of the seal is excellent. The lamination usually consists of microcrystalline wax and other materials capable of providing a very tacky seal. Since a tissue is laid over the wax to prevent blocking, it helps increase the strength of the bond when a seal is made.

Film 190 is manufactured by Standard Cap & Seal. It is not particularly revolutionary in so far as the types of films used in the combination are concerned. They are cellophane and polyethylene. However, the unique feature is that the cellophane has been "stabilized" and the possibility of delamination almost eliminated. This material is being used for vacuum packaging of cut meats. Meats packed in this manner remain fresh for much longer periods of time than when oxygen has free access to the meat.

There are many times when the food industry would like to have a good so-called "releasing paper" for use when cooking sticky products. Some papers have been used for this application in the past with a moderate degree of success, but the silicone-treated papers promise to take us a big step forward in improving the performance of the "releasing papers."

Kalamazoo Vegetable Parchment Co. has developed a silicone-treated parchment with extremely interesting properties.

"Tyton Tite" is produced by Marathon. It is a locker paper which provides very good moisture protection at low temperatures. It consists of two specially plasticized kraft papers laminated together and coated on one side. The coated side is placed next to the meat and it permits the wrap to be removed with ease after the wrapped meat has been in cold storage. The coating next to the meat is hard, glossy, scuff resistant, non-blocking and flexible at low temperatures. The wax laminate has been specially designed for low temperatures. The Marathon organization was somewhat reluctant to release the information on this sheet because of the current shortage of polyethylene, which limits the production of this material.

Reducing Product Damage Through Better Shipping Protection—A. M. UNDERHILL, *packaging engineer and superintendent of shipping, Meter and Instrument Division, General Electric Co., West Lynn, Mass.* The whole purpose in designing for shock protection is to limit the forces which may act on the packaged article. If we do not know to what values to limit the forces, a rational design procedure cannot be applied and we are reduced to the old cut-and-try methods currently used. This, then, is the first problem—to know our product, both its weakness and its strength—what abuse it will take and still deliver safely to destination.

The second prerequisite is to know the material available for packaging and packing—what it will do—how it can be applied—and its holding and shock-resistance characteristics.

Load-compression curves are of great value as a permanent record of the elasticity values of cushioning materials and reduce a mass of statistics to a simple and easily read form. They represent the amount of compression or deflection available under increasing loads.

The data necessary to plot such curves can be secured in several ways, such as impact tests, which require equipment and facilities, hydraulic loading and dead-weight loading. The latter method will not give as accurate results, but for general purposes, it is accurate enough.

Rubberized products such as latex-covered hair and latex-covered fibre are extremely effective cushioning materials if and when used properly and within the effective elasticity range of the material.

Laboratory tests show that these materials have a static or dead-load range of from 0.035 lbs. per sq. in. minimum up to 1.6 lbs. per sq. in. maximum. Below this minimum, the material is too dense to give good results and above this maximum, the loss in depth is too great to leave enough compression to do much good.

For the dynamic or live load, the maximum recommended loading is 16 lbs. to the sq. in., depending on density and thickness of the material.

One of the big advantages of these latex-covered materials is

that they are practically moisture free and moisture resistant and have practically no permanent set if loaded only to their safe elastic limits.

Cellulose wadding of both the built-up layer type and the fabricated type have their greatest application as cushioning for the packaging of very-light to medium-light articles. They are presently used in packing for many other purposes than cushioning such as filler, absorption of liquids and to avoid scratching or marring of finishes.

The range of compression loading as a cushion material is as follows:

The static or dead load range recommended runs from 0.025 lbs. per sq. in. to 8 lbs. per sq. in. The dynamic or live loading should not exceed 16 lbs. per sq. in., depending on the density and thickness.

The disadvantage of this type of cushion material is the fact that it has a decided permanent set and will lose a large percentage of its effectiveness under heavier loads and/or repeated shocks. Part of this loss can be overcome by a tight pack which will use up a part of the set, which also reduces the range of effective loading.

Moisture is another drawback in the use of many cellulose waddings. However, these cellulose materials are not affected by low temperatures.

Rubber and rubberized products, on the other hand, become somewhat brittle at very low temperatures and lose most of their cushioning value. Sponge rubber may be used as a package cushioning material and where used properly is especially effective. Such material can be purchased in practically any desired density from extremely light to very dense. As there are less-expensive commercial cushioning materials which will accomplish satisfactory results, the use of the light-density sponge rubber, except for very special applications, is not necessary. The denser sponge or foam rubber, however, due to its load-carrying capacity, is unsurpassed for heavy loads, both static and dynamic, which require shock protection in the low "G" range, say, 100 G's and under.

This denser sponge rubber will support static loads from 0.75 to 14 lbs. per sq. in. and dynamic loads up to 70 lbs. per sq. in.

There are, of course, other cushioning materials such as the old standbys, excelsior and shredded papers, all of which fill a definite need as a cushion material if properly used as such.

In my opinion, the use of popcorn as a cushioning medium has had too much publicity.

Significant Advances in Packaging Printing—Dr. A. C. Zettlemoyer, *research director, National Printing Ink Research Institute, Lehigh University, Bethlehem, Pa.* Even with the inroads of other printing methods, letterpress still accounts for about 75% of the printing of all packaging materials. It permits strong, solid prints, sharp clear-cut effects and excellent multicolor work. New high-speed rotary letterpress machines have been recently put into use for printing labels and cartons. The printing-ink makers have been continually improving and developing letterpress inks.

Steam-set inks used in letterpress printing continue to make remarkable progress in the packaging field. These inks dry due to precipitation of the binder from a glycol-type solvent when exposed to steam or even to the moisture in the paper stock. About 50% of corrugated boxboard is reputed to be printed with this medium. Furthermore, about 80% of all kraft-bag printing and a large majority of bread wraps are now printed with steam-set inks. Chief objection to steam-set inks is that they lack gloss, but with rapid drying, non-toxicity and faintly pleasant odor, their use is expanding.

The expanding use of aniline printing to about 10% of packaging printing continues to be one of the outstanding trends in the production of packaging and wrapping materials. The printing process is essentially letterpress, although the use of alcohol-type solvents and rubber plates have set this process apart. The inks are fluid, containing soluble dyes, and now pigments to gain opacity. Most glassine, foil and cellophane wraps are printed with aniline inks on rather simple presses in continuous rolls; often heat is applied just after printing to set the ink into the surface. The new plastic films have entrenched aniline printing further because these difficult surfaces can be handled well if the proper solvent is employed in the ink.

Polyethylene remains the number one development in plastics for packaging due to its inertness and resistance to vapor transmission. Attention should be directed to the new laminations of polyethylene to paper and boxboard. Films of the order of three-quarters of a mil are extruded and pressed into the paper or boxboard in a continuous process. This technique reduces the amount of polyethylene required. In addition, the printing can be applied on the outer paper surface.

Coverings for set-up boxes have been printed by the aniline process for a number of years and now recently boxboard has been successfully run with this process. Some kraft and jute liners for corrugated boxes and display cartons are also printed by the aniline process. These examples emphasize that aniline printing is no longer restricted to glassine, cellophane and other films and foils. The aniline process is best suited to solids, lines and type. Coarse halftones can be printed successfully, but process color work is better left to other methods.

Offset lithography accounts for only about 5% of packaging printing, but it is definitely on the increase. This is because of the minimum amount of "make-ready," the low cost of the plates and plate preparation, the flexibility of the process and the versatility in relation to the surfaces printed. Widely used in tin printing or metal decorating because the ink is printed from a rubber blanket rather than from hard type, it is also used successfully on rough, uncoated paper stocks. Dry offset, plus subsequent baking, has been successfully employed on repeat containers, cylindrical items, molded plastics, as well as films.

Rotary gravure printing possesses the same advantage as aniline printing in that inline units such as coating and cutting equipment can be installed. The inks are quite fluid and fast drying, allowing many difficult surfaces to be printed with a wide range of tone value. Less skill is required than for offset or letterpress. About 10% of packaging printing is now done by the gravure process. Materials as divergent as boxboard and plastic films are now successfully printed by the gravure process. Probably the major limitation is that the plates are more expensive to prepare than are those for any other type. A new development is the adoption of the gravure process for the production of soap cartons. Also, one large bakery turned to the gravure process in a recent advertising campaign to gain a pleasing gradation of tone on their new bread wraps.

It would seem ill advised as well as contrary to the fact to state that any one process is ideal and all others less economical for any specific type of work. Cost of ink versus quality is an even more controversial problem. Certainly, inks are a small portion of the cost of a given job and the best job cannot be done with the lowest-cost ink. Yet, improved quality does not derive alone from the use of quality inks. It must be remembered, too, that ink costs do not set the cost of the job. The National Printing Ink Institute is helping the ink maker develop test methods and instruments for viscosity, tack, rubproofness of prints and other important properties which will ultimately lead to even better inks for the packaging field.

Western Show to L. A.

Exhibitors at the National Packaging Exposition were advised that the Western Packaging Show, omitted this year, will be resumed in 1952 on a biennial schedule. Tentative arrangements have been made for the 1952 show to be held in Los Angeles, at the Shriners Auditorium, in early September. The Western Show is managed by Clapp & Poliak, but has no connection with the American Management Assn.

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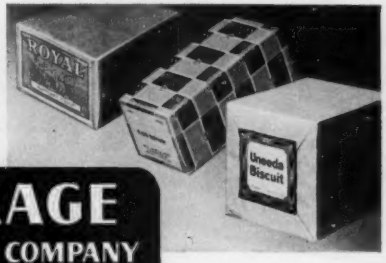

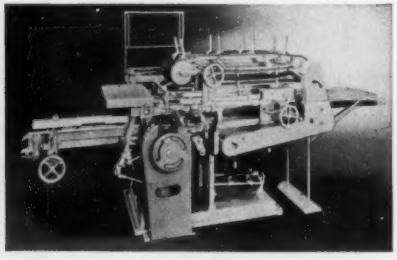

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Flavor factors in frozen-food wraps

A COMPREHENSIVE STUDY ON THE EFFECT OF VARIOUS PACKAGING MATERIALS ON DESICCATION AND FLAVOR OF FROZEN GROUND BEEF.*

By J. D. Winter and Andrew Hustrulid†

Much of the literature dealing with the packaging of frozen foods stresses the importance of an effective water-vapor barrier, but says little or nothing about gas permeability. In fact, water-vapor transfer has been widely used as a criterion to evaluate the relative effectiveness of materials used for this purpose.

It has been demonstrated by many experiments in our laboratory and elsewhere (1, 2, 4, 7, 12)[1] that, under uniform storage conditions, the retention of desirable flavor in frozen meat is significantly affected by the type of packaging material used. The evidence in this respect appears to be conclusive.

Hanson and her co-workers (3) found that the type of package was of greater importance than storage temperature in the range from +10 deg. to −10 deg. F. for retention of quality of precooked frozen creamed turkey and chicken held for 4, 8 and 12 months. The containers used were sealed, unlacquered cans and a commercial type of container consisting of an MSAT cellophane bag in a locker carton with an overwrap of laminated waxed paper.

The reasons for these differences in protective value are not fully understood. Throckmorton (10) in 1942 believed that the most universal problem in packaging foods is to prevent the transmission of gases and vapors through the walls of the container. Winter and Hustrulid (11) in 1944 called attention to the need for protecting frozen foods from atmospheric oxygen. Robertson (8) in 1950 states that "oxygen tightness is probably more important to retention of meat flavor in freezer storage than is moisture-vapor [water-vapor] resistance."

Very little data relating directly to frozen foods were available to support these views, except that vacuum packing in hermetically sealed metal containers was known to prolong the storage life of frozen meat. With unfrozen meats, it is known that deterioration in flavor and odor occurs when atmospheric oxygen reacts with the triglyceride or other components of natural fats. The oxygen combines with the unsaturated fat molecules to produce peroxides, which subsequently decompose and react further with oxygen to produce aldehydes, keytones and short-chained fatty acids.

Preliminary studies using ground meat packed at our laboratory on Oct. 22, 1946, indicated that packaging materials with very low water-vapor permeability were not equally effective in retaining desirability of flavor. For example, 0.002-in. aluminum foil and 0.0015-in. polyethylene were compared, using the single druggist-type wrap. Weight losses with each of these wraps were negligible, but average scores for desirability of flavor, after nine months storage at −5 to −8 deg. F., when converted to percentage values on the basis of the highest score equaling 100, were as follows:

aluminum foil (0.002 in.)	100
polyethylene (0.0015 in.)	73

In 1949 Steinberg, Winter and Hustrulid (9) found highly significant differences in palatability of ground beef stored at 0 deg. F. for periods up to seven months under atmospheres containing low, normal and high concentrations of oxygen, with the scores decreasing in that order. Moisture losses of about 5% caused little decrease in desirability of flavor. Hanson, et al., (3) found that cooked, frozen peas deteriorated at a faster rate when held in a loose pack as compared to a solid pack (surrounded by sauce). On the other hand, Legault and his colleagues (6) found no significant differences in palatability between samples of frozen peas stored in air and in nitrogen in sealed metal cans for 12 months at −10 deg. F. Oxygen present in the air pack after 12 months ranged from 18.8 to 20.5% and from 0.8 to 1.7% in the nitrogen pack.

However, it is probable that oxidative rancidity is not so important a problem with frozen vegetables as

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* Paper No. 2273 of the Scientific Journal Series of the Minnesota Agricultural Experiment Station.

† Both of the University of Minnesota, St. Paul, Minn.

[1] Numbers in parentheses identify "References" appended.

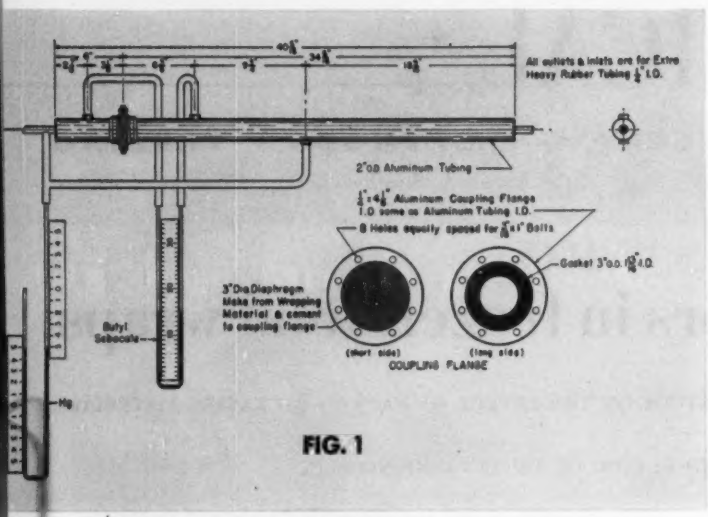

FIG. 1

APPARATUS which is used to determine the relative rate of oxygen transfer through packaging materials at 0 deg. F. is illustrated above.

with meats. While most vegetables contain unsaturated fat, the total amount of fat is relatively small and is usually well distributed in the tissues, and the tissues also contain inhibitors (natural antioxidants) which tend to retard oxidation of the fats.

Materials and methods

To obtain more data on the relation between desiccation and flavor retention, another experiment was commenced during 1947 and this was followed by more comprehensive studies initiated during 1949. Ground beef was used in all of these tests.

In the 1947 experiment, 300-gr. samples of meat were wrapped in six different packaging materials as shown in Table I. Four replicate samples were prepared for each material. A single druggist-type wrap was used for the transparent film and laminated sheets, and a double butcher-type wrap for the wax-coated sheets. The folds were held in place with locker tape. The judging was done after 11 months' storage at –5 to –8 deg. F.

Two experiments were initiated during 1949. The meat in each experiment was prepared from a beef round, aged five days. All fat was trimmed from the meat before grinding. Meat of top commercial grade was used in the first experiment with 24 oz. of cod fat added to each 10 lbs. of lean meat; commercial grade was used in the second experiment with 27 oz. of cod fat added per 10 lbs. The meat was ground twice, first through a medium plate, then through a fine plate. The power grinder was cleaned and washed before use.

In the first of the 1949 experiments, started on June 29, 150-gr. samples of meat were wrapped in 22 different wrapping materials, as shown in Table II. Four replicate samples were prepared for each wrapping material. A druggist-type wrap was used for all sheet materials, with the ends folded under and securely held in place with locker tape. The polyethylene bags used in Lot 7 were sealed and the plastic bags in Lot 23 were packed by the Cryovac process. A double wrap was used for the less-expensive papers, according to customary usage. A single wrap was used in all other instances as indicated in Table II. Sheets measuring 8½ by 10 in. were used for all sheet materials except aluminum foil, for which sheets 7½ by 10 in. were used.

A uniform package thickness was obtained by spreading the meat in a stainless-steel form before wrapping and then pressing the wrapped package under a 14-lb. steel plate with 1 1/16-in. clearance between plate and table surface.

The meat in the second of the 1949 experiments, started on Nov. 3, was handled in the same manner. This experiment was undertaken to check previous results with a new type of paper and included only three wrapping materials. Results are shown in Table III.

The meat used in these experiments was weighed before packaging and each package was weighed again at room temperature after wrapping. The packages were frozen and stored at a nearby locker plant and all subsequent weighings were done in the locker storage there, using a No. 294-A Eberbach balance which previous experience had shown was not

TABLE I—COMPARISON OF PROTECTIVE QUALITIES OF SIX MATERIALS USED AS WRAPPING FOR FROZEN GROUND BEEF

Date packed, May 26, 1947

Type of material and number of wraps used	*Lot No.*	*Type of wrap*	*Weight loss after nine months* %	*Visible desiccation after 11 months*	*Scores for flavor after 11 months* %*
Laminated sheets (single wrap)					
Aluminum foil (0.00035 in.) and kraft	1	Druggist	0.10	Negligible	96
Glassine and bleached kraft	2	Druggist	0.27	Negligible	94
Cellophane (MSAT) and kraft	3	Druggist	0.15	Negligible	100
Transparent film (single wrap)					
Polyethylene (0.0025 in.)	4	Druggist	0.10	Negligible	90
Coated sheets (double wrap)					
Waxed-one-side locker paper, 48 lb.	5	Butcher	1.95	Moderate	72
Waxed-one-side locker paper, 42 lb.	6	Butcher	1.20	Severe	66

* Original scores by judges were converted to percentage values on basis of highest score equaling 100.

TABLE II—COMPARISON OF PROTECTIVE QUALITIES OF 22 MATERIALS USED AS WRAPPING FOR FROZEN GROUND BEEF

Date packed, June 29, 1949[1]

Type of material and number of wraps used	*Lot No.*	*Weight loss after six months* %	*Visible desiccation*		*Scores for flavor after six-eight months at −5 to −8 deg. F.* %*	*Scores for flavor after nine-10 months at −5 to −8 deg. F.* %*
			Six-eight months	*Nine-10 months*		
Aluminum foil, 0.0015 in. (single wrap)	2	Negligible**	None	None	94	92
Transparent films (single wraps):						
Vinylidene copolymer (Cry-O-Rap)	23	Negligible	None	None	95	97
Rubber hydrochloride (FF 120, 0.0012 in.)	10	Negligible	None	None	75	86
Polyvinylidene chloride (saran 517, 100 gauge, 0.001 in.)	8	Negligible	None	None	80	76
Cellophane, 300 MST-53	16	1.0	Trace	Trace	84	60***
Polyethylene bag, 0.0015 in.	7	Negligible	None	None	84	66***
Laminated sheets (single wrap):						
Two sheets glassine, with antioxidant	3	Negligible	None	None	100	90
Glassine and aluminum foil (0.00035 in.)	18	1.6	None	Trace	96	92
Glassine and bleached kraft	14	Negligible	Trace	Trace	91	99
Aluminum foil (0.00035 in.) and bleached kraft	1	Negligible	None	None	92	90
Two sheets super-calendered sulfite	20	Negligible	None	Trace	97	90
Glassine-like tissue and bleached kraft	5	Negligible	None	None	91	82
Glassine and sulfite paper	19	Negligible	None	None	91	74
Glassine and bleached kraft	9	Negligible	Trace	Trace	80	67
Double wound sheets (two sheets on roll):						
Cellophane (300 MSAT-87) and waxed-one-side locker paper	6	Negligible	None	None	88	92
Coated sheets (kraft and sulfite papers)						
Single wrap:						84
Coated-one-side, saran latex formulation	12	Negligible	None	Trace	95	
Coated-one-side, Geon latex formulation	11	Negligible	None	Trace	83	70***
Coated-one-side, polyethylene (Brand A)	4	Negligible	None	Trace	49***	59***
Double wrap:						
Waxed-one-side locker paper, 48 lb.	17	Negligible	Trace	None	86	76
Waxed-two-sides locker paper, 40 lb.	22	8.0	Severe	Severe	84	64***
Oil impregnated locker paper, 50 lb.	21	10.4	Severe	Severe	62***	66***
Coated-one-side, wax and polyethylene	15	Negligible	Trace	Slight	76	75

[1] Principal statistically significant differences are explained in the text.
* Original scores by judges were converted to percentage values on basis of highest score equaling 100.
** Losses (or gains) of not more than 0.5% (0.75 gm.) were considered negligible.
*** The meat in these lots was undesirable or unpleasant in flavor, with two or more judges stating that it was rancid.

subject to sticking at low temperatures. All weighings were recorded to one-tenth of a gram.

The packages were stored on especially constructed steel-mesh shelves placed inside the lockers. An air space of at least 1 in. was provided on all sides of each package except for the steel mesh on which the package rested. Previous experience had shown that placing one package on top of another could lead to erroneous conclusions in packaging and storage tests.

The storage temperature was approximately −5 to −8 deg. F. Continuous records were not made, but the temperature was checked periodically by placing a Bristol portable recording thermometer and a Taylor maximum and minimum thermometer inside the locker. The lengths of the storage periods are shown.

Packaging materials. The packaging materials used were commercial types available on the market, with the exception of Lots 1 and 6 in Table I and Lots 11 and 12 in Table II, which were experimental types supplied by the manufacturers.

The polyethylene film used in all experiments was of the type manufactured by extruding the plastic in tube form.

An unanchored type of cellophane, not recommended by the manufacturer for wrapping moist foods such as unfrozen meats, was selected for Lot 16 (Table II) because this type is widely sold "for frozen foods" without indicating that it is intended for wrapping dry products only.

Permeability data. An attempt was made during 1947 and 1948 to develop a rapid method for determining the permeability of wrapping materials to oxygen at temperatures of 0 deg. F. or lower through the use of well-known oxygen adsorbents. However, the adaptation of methods to normal conditions of frozen-food storage was not successful.

During 1949 a simple apparatus was devised consisting of two fabricated aluminum cylinders with inside diameter of $1\frac{15}{16}$ in. as shown in Fig. 1. One cylinder was 34 in. in length, the other 6¾ in. Each cylinder had a heavy welded flange at one end, with the other end sealed, and was equipped with the necessary pressure and exhaust taps. Differential manometers, containing a low-va-

TABLE III—COMPARISON OF PROTECTIVE QUALITIES OF THREE MATERIALS USED AS WRAPPING FOR FROZEN GROUND BEEF

Date packed, Nov. 3, 1949[1]

Type of material	*Lot No.*	*Weight loss after six months*	*Visible desiccation after six months*	*Scores for flavor after six months at −5 to −8 deg. F. %**
Aluminum foil, 0.0015 in. (single wrap)	2	Negligible**	None	100
Coated sheets (kraft papers)				
Single wrap: coated-one-side, polyethylene (Brand B)	1	Negligible	None	58***
Double wrap: waxed-one-side locker paper, 48 lb.	3	Negligible	None	75

[1] Principal statistically significant differences are explained in the text.
* Original scores by judges were converted to percentage values on basis of highest score equaling 100.
** Losses (or gains) of not more than 0.5% (0.75 gm.) were considered negligible.
*** The meat in these lots was undesirable or unpleasant in flavor, with two or more judges stating that it was rancid.

por-pressure medium (butyl sebacate) were connected with heavy rubber tubing to the taps. A mercury manometer to indicate total vacuum on the whole system was connected to other taps.

The test sheet was placed between the two cylinders and the flanges were bolted together with suitable gaskets to make a gastight seal. The inside diameter of the gaskets was 1 13/16 in. The whole apparatus was then placed in a 0 deg. F. cabinet with the pressure tubing leading to the manometers which were held at room temperature. The system was evacuated to 24 in. of mercury below atmospheric pressure by a suitable vacuum pump and held at this low pressure by clamping off the outside pressure. Oxygen was supplied on one side of the test film to a pressure of about 21 cm. as indicated on the butyl sebacate differential manometers. Readings were taken at periodic intervals to follow the change in pressure as the oxygen permeated through the film to the evacuated chamber on the other side of the film, thus following the rate flow of the gas.

An attempt was made to study the effect of creasing the sheet materials, but it was found that creased locker papers tended to split at the creases after the bolts in the flanges were tightened.

Judging. The flavor of the cooked samples was judged on a scale of 10 points. A panel of three experienced judges was used in the 1947-48 experiments and five experienced judges were used in 1949-50. A range of seven to 10 was used for flavor that was pleasing and typical of the product; five to six for fairly pleasing; three to four for tallowy or lacking in flavor; zero to two for definite off-flavor.

Desiccation was judged visually on a scale of 10 points by the appearance of so-called "freezer burn" on the uncooked samples, with a score of 10 points for its absence on all surfaces of the meat.

All samples were scored for color, tenderness and juiciness by the panel of judges at the start of the experiment and at each judging period.

Identification. A numbered aluminum poultry band was inserted in the meat at the time each sample was unwrapped. This number remained with the sample throughout the cooking and judging procedures. These numbers were used to identify the samples during judging and they prevented errors that might result from the transfer of numbers during the various handling operations.

Cooking. Six samples were placed on the broiling tray of an electric range and broiled for a total time of 15 to 17 minutes at the usual broiling temperature. No salt or seasoning was added.

Results

The results of these studies, indicating desiccation in relation to flavor, are summarized in Tables I, II and III. To facilitate direct comparison between the three tables, the original scores for flavor were converted to percentage values on the basis of the highest score in each of the three experiments equaling 100. In the tabulations, the wrapping materials are grouped by recognized types.

Six wrapping materials were used in the 1947-48 experiments (Table I). The only low scores for desirability of flavor of the packaged meat, after storage for nine months, were in Lots 5 and 6. These two lots were the only ones showing an appreciable loss of weight and visible desiccation. On the 25 lots studied during 1949-50 (Tables II and III), only two showed a significant loss of weight and visible desiccation, yet the meat in seven lots had an undesirable or rancid flavor at the end of the storage period.

In these 1947-48 and 1949-50 experiments, all packaging materials that were relatively permeable to water vapor were ineffective in retarding flavor deterioration of the meat during storage. However, low water-vapor permeability was not a reliable criterion for evaluating the protective value of the various packaging materials with respect to the retention of desirable flavor of the packaged meat during storage. It should be noted that the storage temperature was lower than is commonly found in most locker plants. It is a reasonable assumption that the meat used in these experiments retained its desirability of flavor for an appreciably longer period than would be expected at a storage temperature of 0 deg. F.

Color. Scores of the judging panel for color are not given, as their significance is questionable due to color changes that might be attributable to other factors. Robertson (8) and Kraft and Wanderstock (5) call attention to the influence of various factors in color changes of meat. Relatively small differences of time and temperature in exposure of the meat samples to the atmosphere during processing and subsequent judging might be important in color evaluation when they are not significant for other factors.

Tenderness and juiciness. No significant differences were found in tenderness and in juiciness as determined by the judging panel except in Lots 21 and 22 (Table II), which were given significantly lower scores for juiciness at the 9-to-10-month storage period.

Evaluation of packaging materials. A statistical analysis of variance, based on the original scores for de-

sirability of flavor, was made for the data summarized in Tables II and III. In Table II, Lots 1, 2, 3, 6, 12 and 18 were significantly better at the 5% level than Lots 4, 16, 21 and 22; Lot 23 (Cry-O-Rap) was significantly better at the 5% level than all other lots except 1, 2, 3, 5, 6, 12, 14, 18 and 20; Lot 7 (polyethylene bag, 0.0015 in.) was significantly inferior at the 5% level to Lots 1, 2, 3, 6, 12, 14, 18, 20 and 23; Lot 4 (polyethylene-coated paper) was significantly inferior at the 5% level to all lots except 21. In Table III, Lot 2 (aluminum foil, 0.0015 in.) was significantly better than Lot 1 at the 1% level and better than Lot 3 at the 5% level.

In general, the scores for desirability of flavor indicate that the most effective types of packaging materials were aluminum foil, laminated sheets and transparent films with the exception of the polyethylene bags (0.0015 in.) and the unanchored MST-53 cellophane. An anchored type of cellophane, MSAT-87, was used in combination with a waxed locker paper and was found to be effective.

It will be noted that desirability of flavor was retained satisfactorily when an 0.0025-in. polyethylene film was used (Table I), but not when an 0.0015-in. film was used (Table II). It is not known whether the difference in results is attributable to differences in the thickness of the film, a possible difference in structure, or to some other factor.

Under the conditions of these experiments, all coated and impregnated papers were found to provide ineffective protection in comparison with other types used.

Oxygen transfer. The rate of oxygen transfer per hour for five sheet materials is shown in Table IV for the first and second 12-hr. periods. The rate for the different materials was found to vary to a considerable extent. Aluminum foil (0.0015-in.) allowed the least amount of transfer in the 24-hr. base period and the "waxed-two-sides" paper used in Lot 22 allowed the most rapid amount of transfer.

The latter was an obsolete type of locker paper.

These results are in general agreement with the scores for desirability of flavor. The polyethylene-coated paper had a higher relative rating than is indicated in the scores for flavor, although it showed a rate of permeability to oxygen at 0 deg. F. considerably greater than either cellophane or aluminum foil.

Many difficulties were encountered in these permeability tests. At the low temperatures, condensation of moisture frequently clogged the pressure tubing or formed surface ice layers over films. The pressure differential was extremely sensitive; frequently one side of the system would show enough variation over the other to cause the indicating medium (butyl sebacate) to be drawn into the system. Traps were not satisfactory remedies.

There was no opportunity to compensate for variations in atmospheric pressures and normal temperature fluctuations inside the low-temperature cabinet, which undoubtedly had some effect on the results recorded. It would be necessary to run concurrent tests under identical conditions to develop significant conclusions.

Effect of length of storage. The statistical analysis, based on the original scores, for the data summarized in Table II indicated that there was no significant deterioration in the flavor of the meat between six and eight months of storage, between eight and nine months, and between nine and 10 months. Deterioration in flavor was highly significant (i.e., at the 1% level) between six and either nine or 10 months of storage, and between eight and 10 months of storage.

TABLE IV—AVERAGE DECREASE PER HOUR IN PRESSURE DIFFERENTIAL OF O_2 THROUGH FIVE WRAPPING MATERIALS AT 0° F.

Initial pressure differential 20.9 cm.

Wrapping material	*Decrease in pressure (cm./hr.)** First 12-hr. period	Second 12-hr. period
Aluminum foil (Lot 2, Table II)	0.025	0.047
Cellophane, 300 MSAT-87	0.25	0.075
Polyethylene-coated paper, Lot 1, Table III)	0.375	0.50
Coated-one-side locker paper, wax and polyethylene (Lot 15, Table II)	1.04	0.70
Waxed-two-sides locker paper (Lot 22, Table II)	20.9**	....

* Indicating medium: butyl sebacate, density 0.9646 G/ML.
** Decrease in pressure after 1 hr.

Discussion

The development of new organic plastic films and coatings of various types for food packaging suggests the need for a thorough study of their permeability to gases and water vapor at low temperatures. More information is needed regarding possible correlation between permeability to various gases and the ability of the material to protect frozen foods from flavor deterioration during storage.

It is known that the permeability of wrapping materials to the various gases differs widely. For example, gases are known to diffuse through Pliofilm (rubber hydrochloride) in the following approximate ratios: nitrogen 0.16, oxygen 0.45, carbon dioxide 2.90. Pliofilm FF, used for frozen foods, is relatively low in permeability to nitrogen and oxygen, and moderately permeable to carbon dioxide; it is somewhat more permeable to water vapor than other films commonly used for frozen-food packaging.

Cellophane of the types manufactured for wrapping frozen foods is low in permeability to oxygen, carbon dioxide, nitrogen and water vapor. Unanchored types are not suitable for moist foods because under moist and humid conditions the protective coating on the film is loosened and its effectiveness may be destroyed.

Polyethylene is known to be relatively permeable to oxygen, carbon dioxide and nitrogen, but at low temperatures it provides a high degree of water-vapor protection which does not deteriorate by folding or creasing. Like most other films, its permeability to gases is reduced at low temperature.

Vinylidene-derivative films (saran, Cry-O-Rap), such as used for Lots 8 and 23, are low in permeability to oxygen, carbon dioxide, nitrogen and water vapor. Types used for frozen foods become somewhat stiff at low temperatures. The type used in Lot 23 (Cry-O-Rap) shrinks in the hot-water immersion treatment used in its application. This results not only in a reduction of air pockets, but also in an appreciable thickening of the film. The thickness of the original film used in Lot 23 was 0.0011 in., which may be assumed to increase to about (*This article continued on page 184*)

Rat-repellent findings

RESULTS OF STUDY SHOW THAT PACKAGES MAY BE PROTECTED BY CERTAIN HARMLESS REPELLENTS AS LOW AS 1% IN ADHESIVES.*

By Jack F. Welch†

Damage by rodents attracted by glues and other adhesives of animal and vegetable origin used in packages is a matter of considerable concern to manufacturers and consumers of packaged products. Rats and mice readily feed on these adhesive materials and in the process do much harm.

Although the loss sustained over the country from this source is not precisely calculable, it is undoubtedly of considerable proportions. This has been evidenced from the wide variety of inquiries received by the Fish and Wildlife Service requesting information on ways of preventing such damage. Methods whereby losses such as these may be minimized constitute the subject of this paper.

Materials tested

A search for rodent repellents applicable to paper as a means of preventing or minimizing damage by commensal rodents has been a subject of study by the Fish and Wildlife Service for a number of years. Appraisals of test materials have been made by the following procedures: (1) food acceptance (screening tests); (2) barrier tests (in which candidate materials are applied to paperboard and exposed to attack by trained and motivated laboratory rats); (3) "ratttery" tests (in which promising repellent materials are applied to paperboard test boxes containing food and exposed to penetration attack by wild rats under simulated warehouse and field conditions).[1]

As was indicated in an earlier paper appearing in these pages,[2] chemical compounds applied to paper have not been as effective in preventing rat penetration as would be expected from the results obtained in the feeding tests. In analyzing the reason for this it was disclosed that rats, in gnawing through an obstruction such as a paper barrier or box, ingest only limited amounts of a chemical applied to it and consequently the repellent effect is less pronounced than when the same compound is intimately mixed with food. It was thought, however, that some of these compounds would be useful in reducing rodent damage when mixed with adhesive products which are actually ingested.

Although screening tests had disclosed a number of candidate compounds for such studies, the majority were new materials about which little was known. It was felt desirable, therefore, to include only those chemicals which would have early application, if effective. Consequently, selection was based largely on compatibility in wheat paste and availability on the market. Helpful comments were received from manufacturers of adhesive products concerning the suitability of such chemicals in adhesive materials. The chemicals tested were zinc dimethyldithiocarbamate-cyclohexylamine complex,[3] tetramethyl thiuram disulfide, sodium pentachlorophenate, sodium fluosilicate, copper sulfate, sucrose octa acetate and the commercial germicide "Westamine" containing quaternary ammonium salts.

Method of appraisal

Repellent compounds when incorporated in adhesive products were evaluated in "ratteries" or exposure stations at the Denver Federal Center, a Government reservation. Here wild rats are maintained under conditions simulating those prevailing in heated warehouses and unheated storage sheds. The "ratteries" are of two types, one a brick building consisting of two rooms which are ratproofed to prevent animals from escaping. The rooms are approximately 10 ft. long and 8 ft. wide, separated by a solid brick partition. Each is equipped with nest boxes, harborage and other facilities for maintaining the animals. The second unit consists of a concrete-lined circular pit 9 ft. deep and 28 ft. in diameter, the nearly flat roof of which is conical and stands approximately 3 ft. above the top of the wall. The space between the top of the pit and the roof is lined with hardware cloth to keep the animals from escaping. The floor of the pit, which is also concrete, is covered with

1. RAT DAMAGE to adhesive coatings containing 3% by weight of selected repellent compounds following two months' exposure. Note Test Panel 7-A (sucrose octa acetate) and 7-H (untreated) are completely eaten. Identification of other treatments are 7-B (zinc dimethyldithiocarbamate-cyclohexylamine complex); 7-C (tetramethyl thiuramdisulfide); 7-D (copper sulphate); 7-E (sodium fluosilicate); 7-F (sodium pentachlorophenate) and 7-G (commercial germicide containing quartenary ammonium salts). By error, 7-G contained active compounds in concentrations of 15%.

* The studies described in this article were conducted under grants from the Quartermaster Corps, U. S. Army.

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[1] Welch, Jack F., DeWitt, James B., and Bellack, Ervin. "Rat Deterrents for Packages," *Soap and Sanitary Chemicals, Vol. XXVI*, Nos. 4-5, April-May, 1950.

[2] DeWitt, James B., Welch, Jack F., and Bellack, Ervin. "Rodent Repellency," MODERN PACKAGING, *Vol. 23*, No. 9, pp. 123-126, May, 1950.

[3] Baumgartner, Luther L., and Powell, Stephen E., "Zinc Dimethyl-Dithiocarbamate-Cyclohexylamine Complex as a Deer Repellent Applicable to Agricultural Crops," Boyce Thompson Institute, *Vol. 15*, No. 7, pp. 411-420, 1949.

approximately 2 ft. of sandy soil. Here rats are able to burrow. Breeding and rearing of young have taken place in both ratteries.

Appraisal of the test compounds was carried out by incorporating them in two concentrations of 3% and 1% (by weight), respectively, in a mixture consisting of 1 part dry-wheat paste and 1½ parts ground commercial rat food. Water was added and the resultant series of pastes coated on test panels and paper boxes in the manner shown in the accompanying illustrations (Figs. 1, 2 and 3). The boxes, sealed with sodium silicate, contained a small amount of food to attract the animals. When dry, the test materials were exposed to rat attack. Untreated paste was included in each series for comparison.

During an experiment the animals were maintained on a subnormal diet to stimulate attack on the adhesive coatings. This food was presented in a finely divided form to minimize hoarding and to allow all the animals access to it. Normally this was given only as a supplement when it became necessary to avert starvation. Water was available at all times.

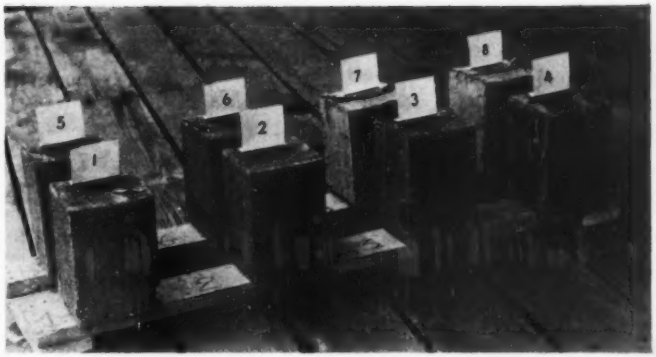
Both wild Norway rats (*Rattus norvegicus*) and wild roof rats (*Rattus rattus alexandrinus*) were used in the tests. Norway rats were housed in the pit and in one of the room "ratteries." The other room was occupied by roof rats. The population levels maintained during the course of the studies averaged about 30 in the pit and 15 in each of the rooms.

Results and discussion

In the first group of tests carried out (August, 1949), the adhesive materials containing 3% by weight of the test repellents were applied to panels of cardboard 4 by 4 in. These, when exposed to rat attack, were soon torn from their mountings and a minimum of information concerning the relative effectiveness of the test compounds was obtained. In subsequent studies this difficulty was overcome by applying the test materials to marked-off squares (4 by 4 in.) along the length of test boards[4] (Fig. 1). Here, adhesion was poor, causing the coating to flake off on contact and consequently there was some difficulty in appraising results. It was determined, however, that under these conditions good protection was afforded over a period of two months by all the repellent compounds except sucrose octa acetate (Fig. 1, Panel 7-A). This formulation and the untreated adhesive material (7-H) were completely eaten from eight test boards in the first 14 days of exposure.

This led to the more crucial and practical tests with the adhesive formulation coated on chipboard and fibreboard boxes. The results of these tests are given in Table I.

The data given in Table I indicate that good protection was afforded the adhesive coating against rat attack by zinc dimethyldithiocarbamate-cyclohexylamine complex in concentrations of 3 and 1%. Tetramethyl thiuramdisulfide also gave good protection at these levels, but coatings treated with this compound were slightly less repellent. Sodium pentachlorophenate



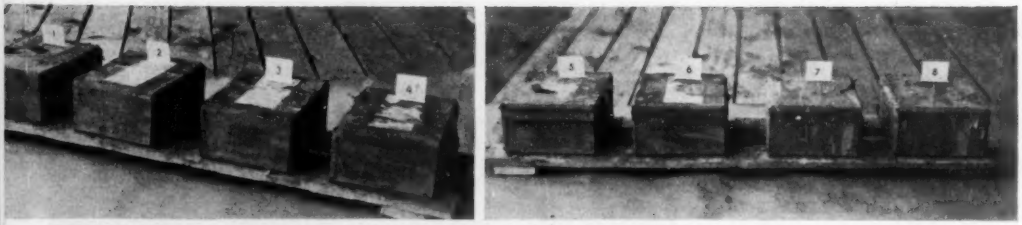
2. RELATIVE EFFECTIVENESS of adhesive coatings containing 3% by weight of selected repellent compounds when exposed to wild-rat attack in "ratteries." Note damage to coating on Box 2 (zinc dimethyldithiocarbamate-cyclohexylamine complex) and Box 3 (tetramethyl thiuramdisulfide) is nil. Box 6 (sodium pentachlorophenate) was slightly attacked. Coatings on Box 1 (sucrose octa acetate), Box 4 (copper sulphate) and Box 5 (sodium fluosilicate) were more severely attacked. On Box 7 (quartenary ammonium salts) and Box 8 (untreated) all coatings were consumed.

TABLE I—RESISTANCE TO WILD RAT ATTACK OF ADHESIVE COATINGS TREATED WITH SELECTED REPELLENT COMPOUNDS, APPLIED TO TEST PAPER BOXES

	3% repellent concentration Approximate amount (average cumulative per cent) of adhesive coating removed by rats from all boxes in three exposure stations after the following periods					*1% repellent concentration Approximate amount (average cumulative per cent) of adhesive coating removed by rats from all boxes in three exposure stations after the following periods.*			
Repellent compound	*No. of test boxes*	*No. of weeks 1*	*2*	*4*	*8*	*No. of test boxes*	*No. of weeks 1*	*2*	*4*
Sucrose octa acetate	5	33	68	70	80	3	5	10	35
Zinc dimethyldithiocarbamate-cyclohexylamine complex	5	T*	T	T	2	3	T	T	3
Tetramethyl thiuram disulfide	5	T	6	6	8	3	T	T	4
Copper sulfate	5	40	60	90	95	3	35	80	98
Sodium fluosilicate	5	15	45	60	70	3	15	20	55
Sodium pentachlorophenate	5	6	10	10	10	3	2	10	37
Quarternary ammonium salt**	5	85	100	—	—	3	20	60	100
Untreated	5	95	100	—	—	3	62	76	100

* Denotes touched only.
** "Westamine," a commercial germicide.

[4] The quaternary ammonium salts (7-G in Fig. 1) were by error employed in a concentration of 15%. This undoubtedly accounts for the better results obtained in this test than in the test with paper boxes, where the 3 and 1% concentration were used.



3. OTHER VIEWS of rat damage to heavy fibreboard boxes which had been coated with repellent-treated adhesives. Numerical references to the materials and the results which were obtained with each are the same as those described in Fig. 2.

gave fair protection when employed at the higher concentration, but was less effective at the 1% level. Sodium fluosilicate, sucrose octa acetate, copper sulfate and the commercial germicide "Westamine" containing quaternary ammonium salts were decidedly less resistive to rat attack at both concentrations. The latter material was little more resistant to attack than untreated paste. In each of the three "ratteries" this and untreated paste were heavily fed upon immediately following exposure.

At the 3% level most of the damage to repellent-treated films took place within the first week or two of exposure. Rat attack thereafter, even in the face of starvation, was less pronounced. During the initial exposure period the animals apparently found the coatings unpalatable and avoided further feeding except for token attacks. This was particularly true of those compounds affording best protection. Following the initial attack, adhesive films, containing the complex zinc dimethyldithiocarbamate-cyclohexylamine, tetramethyl thiuramdisulfide and sodium pentachlorophenate, were damaged very little. The same was true with these formulations at the 1% level except for sodium pentachlorophenate, which was less effective at the lower concentration. Acceptance of all adhesive coatings was slower in this test. The ultimate results were, however, essentially the same in the two tests.

Roof rats were more aggressive than Norway rats in these tests. The pattern of effectiveness of the repellent-treated adhesive coatings was identical for both species, however. These animals not only fed on the untreated and weaker repellent-treated coatings, but also were observed to strip the paper, with the coating, from the box. This tendency has been noted in other tests with paper boxes and seems to be much more prevalent among roof rats than Norway rats. Boxes coated with the more effective repellent-treated adhesive preparations were less vulnerable to this type of damage, but here also some stripping was observed. Where laminated paper products are concerned, it would be well that this possibility be kept in mind.

These experiments indicate that vegetable and animal adhesives, vulnerable to rodent attack, may be protected through the use of repellent compounds when employed in a concentration of 1%. Lower concentrations may give adequate protection, although this was not a matter that was determined.

Under the critical conditions of the tests, these results are felt to be quite significant.

All the compounds tested, except sodium fluosilicate, are of a moderately low order of toxicity to warm-blooded animals and it seems unlikely they would contaminate products at the rate and in the manner they are used in commercial practice. This and their compatability and possible effects on the cohesiveness of specific adhesive products would have to be determined before being used.

As was expected, all the test boxes in these experiments were penetrated by the rats and the food they contained was eaten. As mentioned earlier in this paper, the problem of repellency in barrier control deals with factors quite different from those being considered here. Extensive studies have and are being conducted along this line by the Fish and Wildlife Service.

It is of interest to note that those boxes coated with the more effective repellent-treated adhesive films were the last to be penetrated. The hole made in the boxes was sharp and clean, indicating that there was a minimum of gnawing and contact with the surface film.

This is typical where the coating is objectionable to the animal.

Summary

Evaluation studies were carried out in 1949-50 under controlled conditions to determine the resistance to rat attack of seven selected repellent compounds when they were applied in adhesive formulations. The test materials were incorporated in a wheat paste-ground rat-food combination in concentraitons of 3 and 1% by weight and applied as a coating to the test panels and the test boxes for evaluation.

These were exposed to wild Norway and roof rats held under near-normal conditions in ratteries located at the Denver Federal Center.

Zinc dimethyldithiocarbamate-cyclohexylamine complex and tetramethyl thiuramdisulfide gave good protection at both the 3 and 1% levels in the tests. Sodium pentachlorophenate afforded fair protection at the 3% concentrations, but was less effective when used at the lower level.

Adhesive coating containing copper sulfate, sucrose octa acetate and sodium fluosilicate were more readily attacked by rats although they gave varying degrees of protection in the several tests carried out.

A germicidal product containing quaternary ammonium salts was found to be ineffective at these concentrations. When by error it was incorporated at a concentration of 15% (based on the active quaternary ammonium compounds) the results were more promising.

Acknowledgments

The help of Fred Eggert and Millard Graham, who assisted in these studies, is gratefully acknowledged.

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Questions & Answers

This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Paper containers for oils

QUESTION: We package in metal cans a line of special oils and lubricants and we are interested in substitute packages in the event that metal cans should be restricted in the future. We have heard that during World War II there were developed and used paper containers for oil. We would like your comment on these packages and suggestions as to their usefulness.

ANSWER: A great deal of work has been done to develop containers for oils of all types, particularly for automotive lubricating oils which used a great number of metal cans in the 1-qt. size. Many different types of packages have been proposed and tested for the automobile market and during World War II a considerable number of such packages were manufactured and used with some success.

These paper packages were generally in the form of a fibre can involving the use of glassine or plastic films in the body and end caps, with special adhesives and sealing compounds to increase oil resistance and to prevent seepage through the seals and closures. These packages were capable of safely carrying the oil if they did not undergo excessive rough handling. But their chief disadvantage and the reason for their discontinuance when metal became available again was due to the fact that their construction and use of materials and the limited volume of their production made their cost as high or higher than the metal can. As a result, the oil companies returned to the metal package because of its greater durability and lower cost. Unquestionably, there will be a revival of this type of package if stringent metal restrictions are imposed upon the packaging industry. There has also been additional development work done on oil packages of various constructions and it is possible that improved fibre packages will come into the market during this emergency.

Transparent pack for oily item

QUESTION: We are considering the manufacture of a new product which contains a considerable amount of a vegetable oil in dispersed form. In connection with the packaging of this product we have been considering transparent as well as opaque types of wrappers and packaging, and should like to know if light will have any effect upon the product if we should use a transparent package. Our product is always handled, displayed and used in cool storage and appears to have good stability under these conditions.

ANSWER: There is ample evidence that light will cause a breakdown of oils. The type and amount of the breakdown is dependent upon the composition and distribution of the oil, as well as the intensity and type of light exposure. However in your product, the oils are in a dispersed state and the product is maintained at cool storage. Presumably the light exposure would, therefore, be limited to the light from the display cases and in the retail outlets. Under these conditions your product should have sufficient stability so that you could use either a transparent or opaque packaging material. Transparent packaging films have some light-screening action, particularly toward ultraviolet light which is particularly active in the breakdown of fats and oils. It is probably more important, however, that you use a moisture-proof wrapper because the loss of moisture will result in weight loss and shrinkage, as well as the breakdown of the product in contact with the wrapper. Experience has shown that if moisture loss is prevented in products of this type, the effect of light is considerably minimized.

Alternate for slip-top metal can

QUESTION: One of my associates operates a candy factory and is faced with the problem of a suitable substitute for a 5-lb. cylindrical can with a slip-on cover. I would appreciate your suggestions as to possible substitute packages for this product, which is a wrapped piece of candy very much like toffee.

ANSWER: There are many possible package combinations that will carry your product in an attractive manner and at the same time protect it from deterioration.

The first and most obvious substitute would be the use of an all-fibre or fibre-walled metal-end container which when properly labeled would resemble the all-metal slip-top container previously used. However, there is limited capacity for such units and those involving metal can be subject to further restrictions.

The second suggested substitute is a printed folding carton with an inner bag. This package can be made attractive and, depending upon the choice of materials for the inner bag, can be made to protect the product adequately against deterioration by moisture, etc.

It would also be possible to develop a strong and protective bag which, when properly printed, could be entirely adequate for the packaging of this product.

The bag and carton packages or bags alone have one advantage—they occupy much less space when empty than the rigid container and represent the minimum use of materials to package and distribute this product adequately.

It is, therefore, suggested that you secure samples of all of the various types of containers indicated in order to work out the proper specifications and to develop sources of supply if and when you are forced to use any one of the containers suggested.

To make a sales point at point of sale...

seal with CEL-O-SEAL

REG. U. S. PAT. OFF.

Here's a sure way to get your sales message across... to give it added impact at the critical moment when the customer is deciding whether or not to buy. Put your sales message on an attractive Du Pont "Cel-O-Seal" band!

Pfeiffer Food Products, Inc., did just that. Now bright, attractive "Cel-O-Seal" bands not only catch the food shopper's eye, but also give Pfeiffer's sales slogan outstanding display on an area of the package that would otherwise be wasted. And "Cel-O-Seal" does even more. It inspires the customer's confidence, too. For when shoppers see the neat "Cel-O-Seal" closure, they're assured that care has been taken to protect the contents against tampering and contamination.

Colorful "Cel-O-Seal" bands can do all this for your package, too. They can add eye-appeal, plainly show slogans or sales messages, and stimulate customer confidence in your product.

We'll be glad to work with you to design an outstanding "Cel-O-Seal" band for your package. Just write "Cel-O-Seal" Div., E. I. du Pont de Nemours & Co. (Inc.), 9521-A Nemours Building, Wilmington 98, Del. "Cel-O-Seal" cellulose bands are also sold by Armstrong Cork Co., Lancaster, Pa., and I. F. Schnier Co., San Francisco, Cal.

DU PONT "CEL-O-SEAL" BANDS

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING ... *THROUGH CHEMISTRY*

Heat-Seal Envelopes, Bags, Case Liners... made with REYNOLDS ALUMINUM FOIL

5" x 8" heat-seal envelope made from Reynolds A-90 barrier material, flexible foil-on-kraft.

Heat-sealed bag, size 10¼" x 23", made from Reynolds AR-61, for packaging cork plugs.

VARIETY OF SIZES AVAILABLE

To meet the increasing military need for heat-seal envelopes, bags, sleeves and case liners, Reynolds is now prepared to produce any size from 2" x 2" to 28½" x 35" according to specifications required. Larger sizes, where quantities warrant, can also be manufactured.

Behind this production is a long experience unequaled in the field of laminating metal foil to various materials and in the development of heat-sealing techniques for civilian as well as military packaging.

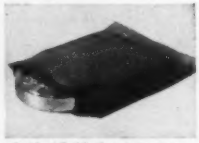
Reynolds extensive modern facilities provide for every phase of package material production, including printing. And Reynolds control of quality from bauxite mines to finished product insures high uniformity and efficient service.

OTHER BARRIER MATERIALS USING REYNOLDS "FIGHTING FOIL"

Acetate-Bonded Aluminum. Pliable, printable, fills and forms easily on most high-speed packaging machines. Takes a firm, impenetrable heat seal. Moisture-vapor and light proof. Holds flavor.

RM-101. For Method II Packaging. Triple lamination of foil, cloth and heat-sealing plastic sheet. Meets specifications for the carton-barrier-carton type of application enclosing a desiccant.

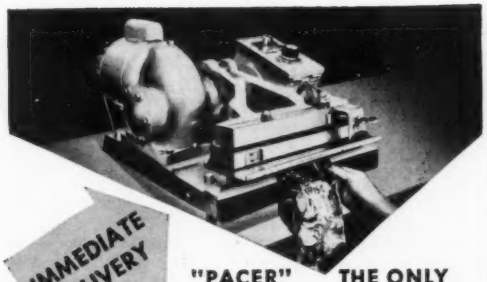
Aluminum Foil. Meets government specifications as a Grade A greaseproof wrapper and as a barrier between metal surfaces and dunnage under JAN-B-148.



AR-61, AR-63, For Bags, Interior Packaging. Foil on kraft. Greaseproof, waterproof, moisture-vapor proof. Meets requirements for bags under JAN-P-117; for material under JAN-B-121.

REYNOLDS METALS COMPANY

Reynolds Technical Service is at your disposal not only for complete data on heat-seal bags and the other materials shown, but also with extensive research facilities for the development of new materials and packages. Contact nearest Reynolds Sales Office or: Reynolds Metals Company, Packaging Market Sales, 2500 South 3rd Street, Louisville 1, Ky.



IMMEDIATE DELIVERY

"PACER" THE ONLY

HEAT SEALER

THAT OFFERS ALL THESE FEATURES:

- Folds and makes tight, permanent seal in one quick operation.
- Seals any heat-sealing bag material with ease.
- "Phantom Feed" mechanism speeds production by as much as 50% through elimination of one complete hand or foot motion.
- Attachments for Hole Punch, Date Code, Name Stamp, E-Z Open.

The result of 20 years of heat-sealing experience, thousands are already in use all over the world.

Automatic and Foot Power Heat Sealers; Rotary Heat Sealers; Hand Sealing Irons; Bag Making Machines.

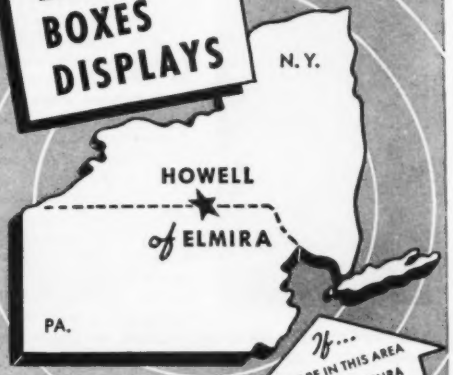
WRITE FOR CATALOG

HEAT SEAL-IT Machines LOS ANGELES PHILADELPHIA

DIV. OF GLOBE PRODUCTS—HEAT SEAL CORP.
3372 ROBERTSON BLVD., LOS ANGELES 34, CALIFORNIA

SINCE 1883

LABELS BOXES DISPLAYS



If... YOU ARE IN THIS AREA HOWELL OF ELMIRA WILL GLADLY CONSULT ON ANY PACKAGING PROBLEMS

The Quality and Character of Howell Made Packages are identified instantly

F. M. HOWELL & CO.

79-95 Pennsylvania Ave., Elmira, N. Y.

...a swell packaging job!

why not let— REET* do the same for you!

with

1.7, 2 and 2.5 GAUGE

Calendered **VINYL FILMS**

in both **non-toxic** and general purpose formulations

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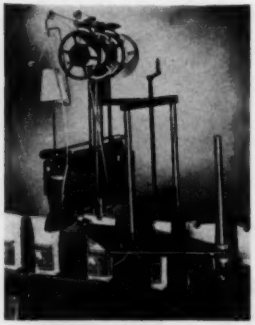
*Trade Mark

Equipment and materials

A NEW AUTOMATIC BAG CLOSER

that pre-forms consumer-sized paper packages and passes them through sewing heads at speeds up to 1,500 per hr. has been developed by the Edward Dilatush Co., Robbinsville, N. J., in conjunction with the Union Bag & Paper Corp. The difference between this new Model 1210-T and its original counterpart (Model 1210-A) is its method of closure. The new machine effects a Dubl-Tape sewn closure and trims the top of the bag above the sewing line for improved package appearance. Moving conveyors lead the filled bags in between two V belts, which collapse the tops of the bags and lead them through the sewing head without further handling. Speed of the conveyor is synchronized with that of the sewing head at 24 ft. per minute.



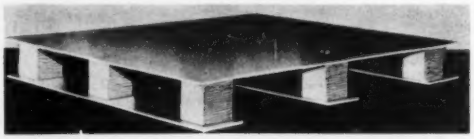
The two companies also collaborated in the development of the new Model 1210-M machine for sewing open-mouth multiwall bags up to 46 in. in length at speeds up to 2,000 per hr. Here, speed of the conveyor is synchronized with the speed of the sewing head at 34 ft. per minute. Both models are of all-steel welded construction, delivered complete with Union Special sewing heads and the standard 10-ft. conveyor, although 15 and 20 ft. conveyors can also be furnished.

A NEW POWDER-PACKAGING MACHINE

that handles all kinds of powders and granules regardless of dryness or moisture content and is unaffected by atmospheric conditions is being offered by Plageman Enterprises, Willoughby, Ohio. A patented method of measuring and agitating the product is said to assure accurate and efficient operation. The measuring device is of the leveled-cup type. A multiple paddled rotor revolving in a cast-aluminum housing is equipped with agitators to keep the product free flowing. This rotor embodies a device for closing off the flow while the measuring cup is discharging its load. This cup is of the steam-shovel type, opening to discharge its load, which prevents moist powders from sticking and assures each measured amount to be the same. Illustrated is Model PPO-1, the smallest model built, used to fill small and medium packets, small cartons, bottles and boxes. It weighs 98 lbs., requires only 14 by 18 in. of floor space, stands 60 in. high, is portable and operates at 15 to 50 fillings per minute. Larger models are available. The same operating mechanism can be incorporated with the company's glue sealer or heat sealer to provide semi-automatic or fully automatic machines.

A NEW EXPENDABLE PALLET

that is said to have more strength and safety has been placed on the market by Mead Board Sales, Inc., 3347 Madison Rd., Cincinnati 9, Ohio, after extensive laboratory and field tests and after use by cooperating firms in many industries. This Mead expendable pallet has two distinguishing features, according to the company: (1) it is made of the sturdiest type of Mead Chestnut Fibre Board, has a solid smooth deck and is produced especially for meeting the exacting requirements of



pallet handling, packing and shipping; (2) it has wood supports or legs instead of the usual paper-product legs, which offer increased support, resistance to moisture and longer life. The pallets are light in weight, have four-way accessibility and are low cost. They are sold through selected manufacturer-distributors in most sections of the country and a complete engineering service on expendable-pallet problems is available for consultation without charge.

INEXPENSIVE HEAT-SEALED UNIT PACKAGES

for pills or other small objects are claimed for the new "Strip Seal-It" machine made by Globe Products—Heat Seal Corp., 3800 Robertson Blvd., Los Angeles 34. It forms individual airtight pockets up to a maximum of 1¼ in. in diameter in any heat-sealing material—cellophane, foil, Pliofilm, etc.—and will also form pockets up to 1¼ in. square in either a single or double row. Mounted on its own portable metal stand, the unit requires no motor. The top sealing jaw, which is heated, is lowered for sealing merely by pressing on the "Kick-Leg" foot lever, which is said to produce 10 times the pressure at the jaws as is exerted by the foot. As a protection for pharmaceuticals or other delicate objects, the bottom jaw is not heated. Two rolls of heat-sealing material are threaded through the feeding groove under the sealing head. Pills or other objects to be sealed are dropped by the operator into a self-aligning slot at the left of the groove. At the same time, with his right hand, the operator pulls the strips through the groove to an inscribed mark. This automatically places the object to be sealed between the strips and in position for sealing. The sealed objects extend in a strip from the right of the feed line and can be cut off in units of any desired length. An operator of average ability is said to attain quickly a speed of 20 to 30 pockets per minute.

BOARD HIGHLY RESISTANT TO WATER ABSORPTION

is being used by the Marathon Corp., Menasha, Wis., in frozen-food cartons. The new "Impervo Board" is a specially treated board, waxed on two sides, to impart water and stain resist-

PLIABLE

TOUGH

Saran film

MOISTURE-PROOF

ACID-RESISTANT

ALKALI-RESISTANT

. . . ideal laminating material for food packaging!

You can use moisture-proof saran film as a laminate for many packaging materials . . . with excellent results! Possessing an exceedingly low water vapor and gas transmission rate, saran film gives added protection against moisture to food packages for civilian and defense needs.

In addition to its high moisture-proof qualities, saran film is resistant to attack by nearly all chemicals, including most acids, alkalies, organic solvents and salt solutions. It maintains these qualities through a wide temperature range.

When considering the use of aluminum foil, paper, or board for laminating with films, be sure to specify saran film. Its excellent chemical and physical properties can be incorporated in the production of unit packages, pouches, or overwraps for drugs, cosmetics . . . and many food products. Write Dow today for complete information and let us put you in touch with saran film converters who can supply your packaging needs.

Plastics Division • Packaging Section **MTOF-5**

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

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The Dow Chemical Company • Plastics Division, Dept. **MTOF-5**
Midland, Michigan

Please send me information on unit packages, pouches and overwraps in saran film laminated constructions.

Name _____ Title _____

Company _____

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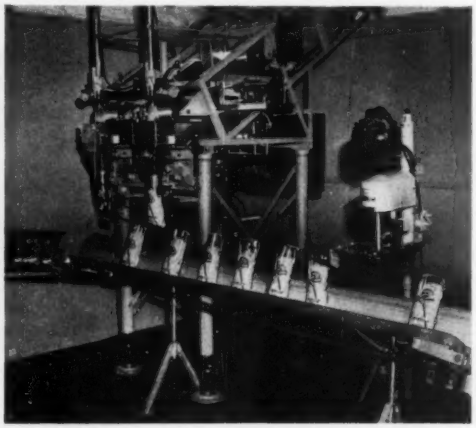
DOW plastics

Equipment and materials

ance. The company reports that tests show that the board retains its stiffness after a carton has stood half full of water for many hours. The new board, being stain resistant, remains pure white. It is said to permit faster production and smoother automatic packaging operations in the plant because of the board's strength. The special waxing keeps products from freezing to the board during quick freezing. Cartons made from the new board are more economical than laminated ones and serve equally well for dry, semi-dry and wet-pack items, thus simplifying inventories. Construction and size are exactly the same as Marathon's top-opening, one-piece hinged carton.

A HIGH-SPEED NOODLE WEIGHER AND FILLER
that provides accuracy of weight within $\frac{1}{32}$ oz. without the need for check weighing is claimed for the new L & M "Pace Setter." The machine is available with fully automatic operation, with flat bags placed in the magazine and the unit setting the pace for the production line, or semi-automatic operation, where the operator places bags on filling spouts where they are automatically held during filling and shaking operations. The product is combed before entering the vibrator tray and this, with a dribble feed, assures accurate weights. The bucket dumps its load on a fast moving belt where a moving comb spreads it evenly into the filling hopper that is being shaken; when sufficiently settled, a plunger operates to insure uniform filling height. The fully automatic unit illustrated is in operation at the Kansas City, Mo., plant of the American Beauty Macaroni Co. The machines are built by the L & M Machinery Corp., 2139 Lake St., San Francisco 11, in either single or double units. Speed of operation is up to 70 cases per hour per unit.

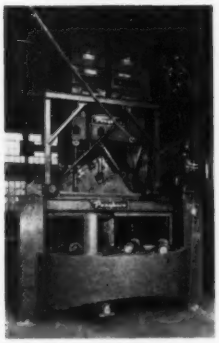


A NEW TEA-BAG TAGGING MACHINE
for attaching tags with strings to individual tea bags or coffee bags at the rate of 120 per minute is being offered by the Stokes & Smith Co., Philadelphia, a subsidiary of Food Machinery & Chemical Corp. The new tagging machine works in connection with the Stokeswrap automatic packaging machine. The individual bags are delivered on the duplex chutes from the Stokeswrap machine. Printed tags are fed from reels and are automatically cut off. The string is fed from spools, cut to the desired length and attached with wire staples—one end to the individual tea bag or coffee bag and the other end to the tag. The completed bags with the tags attached are delivered

on the outgoing conveyor, counted and stacked in two rows so that only one attendant can pack these into the cartons and have ample time for inspection.

SIMPLIFIED, SPEEDY CLEANING OF DRUMS

is made possible by two automatic drum-cleaning machines announced by the Pangborn Corp., Hagerstown, Md. The Roto-blast Model ES-400 illustrated is designed to clean 1,000 to 1,100 drums and drum heads per day down to the bare metal, or 125 to 140 per hour. The Model ES-382 will clean 320 to 560 drums and covers per day, or 40 to 70 per hour.



Both of the machines clean on the same principle. Metallic abrasive is hurled against both the interior and exterior surfaces of the drum by the Roto-blast vaned wheels, which revolve at 2,300 r.p.m. The cleaning cycle takes from 50 to 90 seconds, depending on the type of material to be removed.

A LOW-COST HEART-SHAPED TRANSPARENT BOX

that is drawn out of sheet acetate is now available as a stock item from the Transparent Plastics Container Division of the J. E. Sales Co., 132 Spring St., New York 22. Previously these boxes were fabricated from several pieces of material, which made them less durable and added to their cost. The box illustrated, used by the Abon Mfg. Co. for packaging jewelry, is made of 7½-gauge Monsanto acetate, is 1 in. deep and 3⅛ in. across the top. Others are available up to 6⅝ in. across. The die from which this box is drawn turns out half the container on the same production basis as that achieved in making the regular round drawn covers. The boxes can be silk screened in various designs.

A NEW SHEET DISPENSER

designed to eliminate waste and duplicity of sheets when wrapping food products with Pliofilm is available from the Cleveland Lathe & Machine Co., 676 Broadway, Cleveland, Ohio. This "Just-One" sheet dispenser, illustrated, consists of a painted wooden tray with an arrangement of needle points that permit one sheet to be removed at a time from the pile of Pliofilm stock. Slip sheets are unnecessary. Four trays handle sheets from 8 to 18 in. wide.

The Cleveland firm also has a new heat-sealing roller iron, known as the "Roll-A-Seal," that simplifies the pre-packaging of hams, roasts and other packages of irregular shape. The device, which may be plugged into any 110-volt electrical outlet, has a revolving tube or roller at one end and a handle at the other. When applied with a wiping action, the heated tube rolls easily over "hills and valleys," securely sealing the film on irregularly shaped as well as smooth-contoured packages. An adjustable thermostat enables sealing various gauges of film.

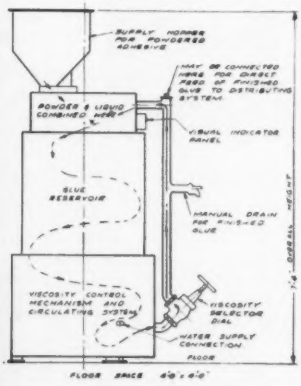
A new, inexpensive, portable film sheeter offered by the same company permits the user to take advantage of the lower cost of Pliofilm by the roll rather than by the sheet. Made of hard maple and reinforced with metal rods, the film sheeter

Equipment and materials

has a cutting knife attached by a chain. To operate, merely wind the film around the metal frame and cut through a slot in the rod in the center of the winding frame. The size of sheet (nine different sizes from 8 by 8 in. to 18 by 18 in. can be made) is determined by adjustments made to the metal winding frame. Two rolls of film can be accommodated on the sheeter simultanously.

AUTOMATIC CONVERSION OF DRY ADHESIVES

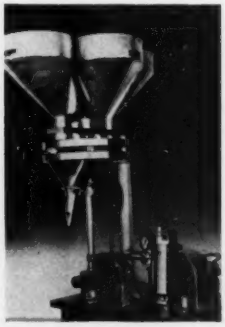
into a ready-to-use liquid glue of the correct viscosity by the new Visco-Mat machine manufactured by the Triangle Package Machine Co., 6642 W. Diversey Blvd., Chicago, is claimed



to effect a saving that may cut adhesive costs as much as 60% in sealing or wrapping such items as food, chemicals, dairy products and boxboard containers. The accompanying diagram shows how the unit works. The operator puts dehydrated adhesive into the hopper, then sets a simple control dial to the viscosity desired. The machine automatically measures and mixes the water needed to produce this desired viscosity.

A MULTIPLE-HOPPER FILLING MACHINE

that eliminates the necessity for using several fillers for filling more than one free-flowing, dry product into the same container is being offered by the Paul L. Karstrom Co., 1822 W. 74th St., Chicago 36. The unit illustrated meters each of four products separately from four individual hoppers and discharges the products into transparent film bags in layer form rather than being blended together. With the products neatly arranged in layers, the resulting package is unique in appearance and has greater shelf and eye appeal. An air attachment on which a patent is pending, controlled by a cam movement, is provided for opening the bottoms of gusset-type bags just prior to the initial discharge so that the material will lie flat in the bottom. The filler, known as the "Multi-Pak" is driven by a ¼ h.p. motor through a variable speed drive.



Plants and people

The creation of a new and wholly independent Box and Paperboard Division of **Ball Bros. Co., Inc.**, and the appointment of **Burnham B. Holmes** as general manager of the new operating group has been announced. Mr. Holmes, a former sales executive for Inland Container Corp. until he joined the Ball company a year ago, will report in the discharge of his new duties to **Duncan C. Menzies**, executive vice president and general manager. Ball owns and operates a straw paper-mill at Noblesville, Ind., and a box plant at Muncie. The establishment of the new division was undertaken, according to Mr. Menzies, to help the company obtain adequate supplies to meet its glass-container requirements for shipping containers and other packaging supplies and integrate its purchases of those supplies with its own production.

Mr. Holmes

Hartford-Empire Co., Hartford, Conn., of which **Standard-Knapp** is a division, has changed its name to **Emhart Mfg. Co.** In addition to Standard-Knapp, which manufactures automatic packaging machines, the Emhart organization includes four other divisions and one wholly owned subsidiary, **Plax Corp.**, which makes Plaxpak polyethylene bottles and other plastic products. The manufacture of glass-making machines will be carried on under the previous name as the Hartford-Empire Division of Emhart. The other three divisions are **Henry & Wright**, Hartford, Conn., which makes automatic presses; **The V & O Press Co.**, Hudson, N. Y., producers of stamping presses; the **Stonington Division**, Stonington, Conn., which manufactures small castings and plastic molded parts.

Bradley Dewey, Jr., has been elected vice president of **Dewey & Almy Chemical Co.**, Cambridge, Mass., in charge of the Cryovac Division.

George E. Fichtner has been named a vice president of the **Muirson Label Co.** He will be in charge of the company's Eastern operations, with headquarters at Meriden, Conn., where the company recently opened a new lithographic plant.

Robert de S. Couch has been appointed as assistant in the Government Controls Division of **General Foods Corp.** Previously he served as director of packaging research for the company.

A new package marking machine manufacturing company has started operations in Hillside, N. J., as the **American Marking Corp. Alfred Reinke** is president in charge of manufacturing and **John K. Jackson** is executive vice president in charge of engineering and sales.

A contract for the purchase by **Marathon Corp. of New York** of the Oswego, N. Y., properties of **St. Regis Paper Co.** has been announced by **William L. Keady**, president and general manager of Marathon, and **Roy K. Ferguson**, president and chairman of St. Regis. Properties being acquired by Marathon consist of the kraft paper mill, the multiwall bag plant and the machine shop of the St. Regis Engineering & Machine Div. Not included in the sale is the equipment in the bag plant and machine shop. St. Regis will continue to get a major part of the output of the kraft paper mill over the next several months. St. Regis expects a start in production the first of next year by its new kraft paper facilities presently under construction in Florida. During that period, St. Regis plans to remove its bag-manufacturing operations from Oswego. **Don C. Rawson** will be manager of the Oswego plant when Marathon takes over. Marathon plans to manufacture materials for the protective packaging of foods at the Oswego plant, thus providing the firm with an Eastern production unit.

General offices and main factory of **The Lord Baltimore Press, Inc.**, are now located in the firm's new plant at 1601 Edison Highway, Baltimore 13, Md.

Moving into a new plant has been started by **Milprint, Inc.**, printing and packaging converters, Milwaukee, Wis. The company's plant No. 5 has already moved into the new building. The entire operation is being planned so that production is interrupted as little as possible. When the move is completed, about the end of July, five of the firm's Milwaukee plants will be housed in the new building, which occupies a site of 22 acres at 4200 N. Holton St., Milwaukee.

The 50th anniversary of the founding of the **American Can Co.** was celebrated recently by more than 34,000 company employees gathered at 71 anniversary dinners in 59 different communities throughout the country, linked together by coast-to-coast telephone network. **W. C. Stolk**, executive vice president, was master of ceremonies in New York where, before 1,500 New York headquarters employees at a dinner in the Waldorf Astoria ballroom, he introduced the divisional managers over the network. A citation to the American Can Co. by the **National Canners Assn.** for distinguished service to the progress of the canning industry and to a higher standard of living for the American public was presented by **Carlos Campbell**, executive secretary of NCA, to **C. H. Black**, president of Canco. Canco's Service Emblem program was inaugurated at the anniversary ceremonies by **D. W. Figgis**, chairman of the board.

Keyes Fibre Co., makers of molded pulp and plastic products, Waterville, Maine, announce the election of **Dwight S. Brigham**, formerly president, as chairman of the board. **Wallace E. Parsons**, former vice president and general manager, is now president. **Ralph H. Cutting**, former treasurer and assistant general manager, has been elected vice president and general manager. **John W. Thomas**, former assistant treasurer, is now treasurer. All former board members were re-elected.

Max Lousin has been elected president of **Bensing Bros. & Deeney, Inc.**, manufacturers of printing inks, and **Robert H. Bensing** has been elevated to the post of

Max Lousin (left) and R. H. Bensing

vice president. Mr. Lousin has been with BBD since 1939, serving as general manager of the company's Chicago plant and sales director for the Midwest and West.

Sun Tube Corp. has broken ground for a new 80,000 sq. ft. plant in Washington, N. J., to supplement its main plant at Hillside, N. J. The new plant is scheduled to start production on condenser cans and tubes early in 1952. **J. D. Martin**, vice president, will be in over-all charge and **Alexander Ballard** will be resident manager of the new plant.

Offices of **Arno W. Nickerson**, consultant in paper making and converting, have been moved from New York City to 175 Main St., White Plains, N. Y., and will operate under the corporate name of **Arno W. Nickerson, Inc. Clyde A. Benson**, chief engineer, is vice president.

Formation of a new subsidiary company, **Food Machinery of Canada, Ltd.**, has been announced by the **Sprague-Sells Division** of **Food Machinery & Chemical Corp.** Headquarters of the new firm are at 41-43 King William St., Hamilton, site of the earlier FMC branch sales of-

PATENTED

Skates go to the rink (and from the store) in this H & D corrugated "luggage" box

It doesn't take an ice skater long to see that this is more than "just a box"—it's also a handy carrier for his skates. The result? Easier sales for clerks who sell Spalding skates packed in this bright, linen-finish corrugated box. Styled like a smart piece of airplane luggage, this H & D box helps provide the "plus" that turns shoppers into buyers.

The H & D Package Laboratory is ready to add a sales "plus" to *your* product, too, by creating a package with after-sales use—or by providing better display . . . cutting wrapping costs . . . giving extra protection . . . increasing multiple or tie-in sales. For free booklet, "Pack to Attract," write Hinde & Dauch, 5105 Decatur St., Sandusky, Ohio.

H&D®

HINDE & DAUCH

Authority on Packaging

FACTORIES IN: Baltimore • Buffalo • Chicago • Cleveland Detroit • Gloucester, N. J. • Hoboken, N. J. • Kansas City, Kan. • Lenoir, N. C. • Richmond, Va. • Sandusky, Ohio St. Louis • Watertown, Mass. Offices in principal cities.

Plants and people

fice. **C. K. Wilson,** division manager and vice president of FMC, is president of the new company. **Clarence M. Frazier,** FMC vice president, has been named vice president. **Harold L. Link,** sales manager of the Sprague-Sells Division, is secretary. **Lionel Weatherston,** Eastern Canadian sales manager, will manage the Hamilton office. For the present, the new organization will act as exclusive Canadian sales agent for FMC canning and freezing equipment.

Brig. Gen. Joseph A. Holly, U. S. Army Retired, has been appointed executive assistant to the management of FMC's newly established Ordnance Division at San Jose, Calif.

Ben Sussman, president, and **Paul R. Broeske,** vice president and general manager, announce the formation of **Puritan Products Corp.,** with general offices and manufacturing headquarters at 2319 S. Sixth St., Columbus, Ohio. The company specializes in converting packaging films, aniline printing, bag making and water-vaporproof barriers for military use. Mr. Sussman was formerly with Shellmar Products Corp., while Mr. Broeske had been with the Hoover Co.

Mr. Sussman

Paul J. Muldoon has been named sales manager of the **Fleishhacker Paper Box Co.,** San Francisco.

Chippewa Paper Products Co., Inc., maker of corrugated products, announces the opening of its new and greatly enlarged Chicago plant.

Continental Can has opened a new **Bond Crown & Cork Co.** sales office in Detroit, Mich., at 5057 Woodward Ave. **G. Spencer Yull** is in charge.

A major expansion program for **Union Bag & Paper Corp.'s** Savannah plant has been approved by the firm's board of directors. This addition will increase the plant's daily production of kraft paper and kraft paperboard by approximately 400 tons. Work is expected to be completed during the first half of 1953.

Paisley Products, Inc., maker of industrial adhesives, has announced several changes in its Midwestern sales staff, including the opening of two new offices. **Iven G. Nichol,** formerly in the Central Ohio area, has been moved to a new office location in Pittsburgh and will

Plants and people

handle the Western Pennsylvania territory and adjoining portions of West Virginia. **Art Hess,** formerly in Chicago, is now located in Cincinnati, Ohio, covering the Miami Valley and Kentucky. **Malcolm Robinson,** formerly in Cincinnati, moves to the new Southwestern office at Little Rock, Ark., and will cover an area from Nashville, Tenn., to Fort Worth, Tex. **Warren Van Etten** will represent the company in Central and Southeast Ohio and Western West Virginia, with headquarters at Columbus. **Robert Swinney** has been named sales service representative in the Kansas City territory, which includes portions of Kansas and Missouri.

Fibreboard Products, Inc., with headquarters in San Francisco, Calif, has announced that **N. M. Brisbois,** vice president of the firm, is now in Washington, D. C., serving as head of the Paperboard and Board Products Section of the Economic Stabilization Authority.

Mr. Brisbois

Changes in **Acme Steel Co.'s** Eastern sales staff have been announced. **George E. Helm** has been promoted to sales manager of a new district in Baltimore and will also serve as liaison with Government bureaus in Washington, D. C. **Charles E. Klinck** has been named Philadelphia district sales manager, replacing **Charles J. Bruneel,** who enters semi-retirement in October. **Bruce E. Cunningham** has been assigned to the newly created position of area special representative, in New York.

The Hubbs Corp. announces the purchase of the entire inventory and certain physical assets of the wholesale wrapping paper division of **Paper Manufacturers Co.,** Philadelphia. The Paper Manufacturers Co.'s business will be joined with that of **W. B. Killhour & Sons,** which was recently merged with Hubbs. Both businesses will be operated at 10 Chestnut St., Philadelphia.

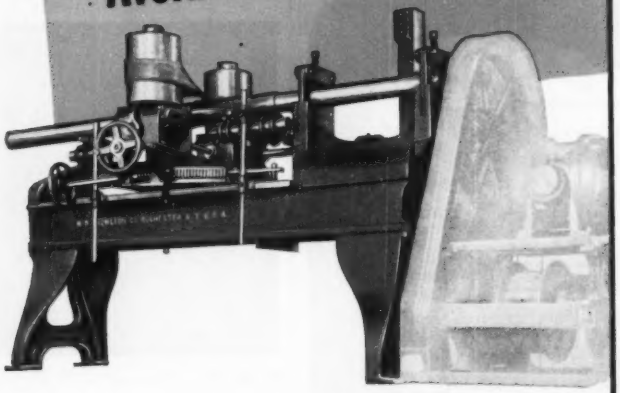
C. W. Curry, Northern Ohio district sales manager for the **American Can Co.,** has been appointed a sales division manager in the firm's Central division, Chicago.

The American Machine & Foundry Co. recently acquired the **Cleveland Welding Co.,** Cleveland, Ohio, for $3,000,000.

Shelton Mfg. Co., Inc., is now located in a new plant at 591 Ferry St., Newark 5, N. J. The new plant buildings provide

TURN TO PAPER WOUND CANS and TUBES

Avoid Container Setbacks



CUTBACKS in materials, mounting costs, likely shortage of labor face container industry.

Knowlton Convolute Wound Paper Cans and Spiral Wound Tubes enable container production men to escape or minimize these difficulties.

Containers produced on these machines have 4 major assets. They are strong, can be turned out fast, can be produced in a variety of shapes and sizes, and cost less to make and less to ship.

Let us submit detailed facts or quotations which prove the efficiency and economy of the Knowlton Convolute Paper Can Winder and Spiral Tube Winder.

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Single and Double Rotary Creasers and Cutters
Single and Double Corner Cutters
Single Stayers (All Sizes)
Universal Coverers, Power (All Sizes)
Hand Power Coverers (All Sizes)
Bench Coverers
Toppers (All Sizes)
Slitters and Rewinders
Flange Benders (Automatic)
Glue Pots

PAPER TUBE & CAN

Automatic Convolute Paper Can Winders
Spiral Winder (Light and Heavy Wall)
Spiral Cut-offs
Tube Recutters
Lap Tube Rollers

SHIPPING CONTAINER

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Plants and people

over 160,000 sq. ft. of manufacturing and office space on a 10-acre plot. All standard corrugated products and specialties will be produced in the new plant.

William R. Huguenin, general manager of **Stokes & Smith Co.,** and **Willard H. Ware,** president of **Hobbs Mfg. Co.,** recently announced that the complete Hobbs paper-box machine line will be represented by the Stokes & Smith sales and service organization except in New England and the Middle Atlantic States. In

W. H. Ware (left) and W. R. Huguenin

these latter "home" districts, both will maintain independent sales and service organizations. These two pioneer companies in the paper-box machine field are joining together in this national sales and service program in order to serve the paper-box manufacturing industry better, according to a joint announcement by the two firms. The Hobbs company, located in Worcester, Mass., makes single, single-sided double and duplex corner cutters, single stayers, single scorers, folding-box gluers, rotary board cutters and thumb-hole cutters. Stokes & Smith, in the Philadelphia plant, make gluing machines, shaping machines and registering conveyors. West Coast sales will be handled by **Anderson-Barngrover,** San Jose, Calif., Div. of Food Machinery & Chemical Corp. Stokes & Smith is a subsidiary of FMC.

Eriez Manufacturing Co., Erie, Pa., has elected **O. F. Merwin** chairman of the board of directors. **R. F. Merwin** is now president and general manager.

St. Regis Paper Co. announces the transfer of **Hugh W. Sloan,** vice president of **St. Regis Sales Corp.** and presently Pacific Coast manager of the company's Multiwall Bag Division, to the New York of-

Plants and people

fice. He will assist **Arch Carswell**, vice president of the company and general manager for the division, in the direction of bag sales. **Robin G. Swain**, production manager of the company's West Coast bag plants, is now Pacific Coast manager.

Richard C. Alden has been elected as a new member of the board of directors of **Stecher-Traung Lithograph Corp.**, Rochester, N. Y. Mr. Alden replaces the late Frederick W. Van Bergh. Other directors elected were **Kendall B. Castle, Fred J. Houck, Raymond F. Leinen, Leslie H. Jackson, Hal W. Johnston, Kenneth C. Townson, Charles W. Weis, Jr.**, and **Ralph J. Wrenn.**

Mr. Alden

The Bemis Bro. Bag Co. announces the recent completion of a multiwall plant and storage facilities at Peoria, Ill., costing more than half a million dollars.

A. E. Dalldorf is now Brooklyn, N. Y., sales manager for Bemis.

Garret P. Kelly Product Handling Systems, 1300 E. Park Place, Milwaukee, Wis., has been appointed Wisconsin representative for the **R. C. Can Co.**, St. Louis, Mo.

Harry A. Chandler, 92, has retired after 77 years of continuous service with the **Dennison Mfg. Co.**, Framingham, Mass. Mr. Chandler's long service is believed to set an American industrial record.

Raphael Block has been appointed by the **Gardner Board & Carton Co.**, Middletown, Ohio, as coordinator of planning and scheduling for all operations. **Charles K. Pigman** has been named sales service engineer.

Earle Bensing, an official and one of the founders of **Bensing Bros. & Deeney**, manufacturers of printing inks, died recently while vacationing in Bermuda.

Carl Percy, founder of **Carl Percy, Inc.**, New York, makers of window displays, died recently. Mr. Percy contributed to the *Modern Packaging Encyclopedia.*

Harry H. Straus, president and chairman of the board of directors of **Ecusta Paper Corp.**, Pisgah Forest, N. C., died.

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RUST PREVENTING WRAP. Booklet on Nox-Rust vapor wrap, a paper wrapping developed to prevent the corrosion of iron and steel parts without the use of rust preventative coatings. E. W. Twitchell Inc. **(S-900)**

LABEL MAKING. Description of facilities, including printing equipment, air conditioning, die cutting, etc., for producing paper labels of all sizes and types. Offered by Kalamazoo Label Co. **(S-901)**

CONVEYORS. Styl-O-Matic accumulating tables, unscrambling tables, curve conveyors and container conveyors, their specifications, uses, dimensions, and schematic drawings are contained in a 24-page booklet. Island Equipment Corp. **(S-902)**

MANUFACTURING FACILITIES. Description of the facilities and type of work which can be handled in a plant which has recently become devoted entirely to defense manufacture. Aluminum Seal Co., Inc. **(S-903)**

HEAT SEAL LABELER. Bulletin explaining how the Dumatic "No-Gin" labeler applies thermoplastic labels on collapsible tubes, glass and plastic bottles, and containers of other sizes and shapes. Dumatic Industries. **(S-904)**

TIGHT WRAP ADHESIVE. Folder describing the properties and advantages of Swift's No. 1252 adhesive, a long tack adhesive for top and bottom sealing and tight wrapping. Swift & Co. **(S-905)**

IPI COLOR PICKER. Handy pocket size color guide for packagers, designers, and printers containing colors most generally used for package printing. International Printing Ink Div., Interchemical Corp. **(S-906)**

LIQUID GRAVITY FILLERS. The features and specifications of Perl fillers for containers from quarts to five gallons are covered in a folder issued by Perl Machine Mfg. Co. **(S-907)**

AMPOULE AND TUBE SEALER. Bulletin describing the function, advantages, sizes handled, and production speed of the Kahlenberg Ampoule and Tube Sealer. Kahlenberg Laboratories. **(S-908)**

ECA STENCILS. Folder containing illustrations and price lists on ECA emblem stencils for marking shipments going abroad under the Marshall Plan. James H. Matthews & Co. **(S-909)**

TAPE PRINTER. Description of a Markem machine for imprinting paper, cloth, and pressure-sensitive tapes with advertising messages, shipping instructions, etc. Markem Machine Co. **(S-910)**

TUCK END CARTON SETUP MACHINE. Folder describing the Tuck-O-Mat, a machine for automatically setting up reverse tuck cartons of almost any size or shape. Includes data on a conveyor for use with the setup machine. Machinery Mfg. Co. Inc. **(S-911)**

GOVERNMENT SPECIFICATION "SCOTCH" TAPES. Handy pocket size folder listing eight official U. S. Government specifications for tape, including twenty sub-sections, and citing the corresponding "Scotch" brand pressure sensitive tapes for each section. Minnesota Mining & Mfg. Co. **(S-912)**

LUBRICATION GUIDE. Informative booklet, illustrated with diagrams and charts, telling how to increase the life of pulp, paper and converting machines. Includes detailed data on lubrication and preventative maintenance, lubricants, etc. The Black-Clawson Co. **(S-913)**

DRY PRODUCT FILLER. The features and specifications of the new combination automatic Whiz-Packer and endless belt conveyor for filling flat bottom containers with dry products are covered in this booklet. Frazier & Son. **(S-914)**

GLASSINE. Booklet containing samples of a number of standard grades of glassine paper. Includes chart on outstanding properties of each grade and suggested uses for each. Riegel Paper Corp. **(S-915)**

PRODUCTION AND CHECKING SCALE. Specification sheet on a wide tower 12-pound capacity scale for production and checking use. The Exact Weight Scale Co. **(S-916)**

ANILINE PRINTING. Highly informative booklet of thirty pages containing detailed data on many phases of aniline printing and on the Champlain Heavy-Duty Rotary Aniline-Anilox Printing Press. Champlain Co., Inc. **(S-917)**

BAG SEALING AND LABELING MACHINE. Sheet containing the specifications of the Sullivan automatic heat sealer with label feed mechanism for affixing labels and sealing heat sealable bags in one operation. Sullivan Heat Sealing Machine Co. **(S-918)**

PACKING TAKE-HOME CARTONS. Description of a Packomatic packaging line designed specially for handling products which lend themselves to multiple packaging in take-home cartons. J. L. Ferguson Co. **(S-919)**

GLUEMASTER LABELER. A folder telling of the advantages of the Gluemaster Round Can-tainer Labeler which registers labels with an overall coverage of glue onto various types of round objects. Kenneth J. Moore & Co. **(S-920)**

PLIOFILM SELF-SERVICE MEAT FILM. Data sheet on Pliofilm FM-1, designed expressly for the packaging of fresh red meats. Contains tips on packaging technique, handling, labeling, purchasing, and use. The Goodyear Tire and Rubber Co., Inc. **(S-921)**

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CONVEYOR SWITCHING UNIT. Description of the uses and operation of the new Lakso conveyor switching unit divider assembly for dividing one line into two or assembling two lines into one. The Lakso Co., Inc. (I-922)

COLOR ON CORRUGATED BOXES. Handy pocket size booklet telling how to use color to achieve the best effects when designing corrugated cartons. Hinde & Dauch Paper Co. (I-923)

WRAPPING MACHINE. Folder covering the features and specifications of Battle Creek Model 47 wrapping machine which is quickly adjustable over a wide range of package sizes. Battle Creek Bread Wrapping Machine Co. (I-924)

PERVENAC LABELS. Bulletin containing a list of products on which Pervenac thermokote labels are suggested for use. Includes printing and varnishing tips for these labels. Nashua Gummed and Coated Paper Co. (I-925)

PACKAGING MACHINES. A general line of machines for packaging, with particular emphasis on frozen food packaging, is covered in this folder. Package Machinery Co. (I-926)

GOLD AND PLATINUM BOX COVERINGS. Sample booklet illustrating many of the embossed patterns in which Old Tavern gold and platinum box cover papers are available. McLaurin-Jones Co. (I-927)

SINGLE SCORER. A machine that accurately and quickly scores all grades of lined or unlined board described. Also contains data on two thumbhole cutters. M. D. Knowlton Co. (I-928)

LABELING IDEAS. Booklet containing hundreds of suggestions for labels of every size, shape, and type for many common and unusual applications. Ever Ready Label Corp. (I-929)

CHEESE PREPACKAGING. This leaflet tells how cellophane wraps can be used to prepackage cheese to achieve greater sales. Contains tips on preferred cheese shapes, wrapping techniques, etc. Sylvania Div., American Viscose Corp. (I-930)

ACRYLIC COPOLYMER EMULSIONS. Technical data sheet covering a series of acrylic copolymer emulsions for use as saturants for paper stock to improve strength, and as a flexible waterproof coating for paper. American Polymer Corp. (I-931)

PLIOFILM SEALER. Description of the Clamco "Rol-A-Seal" for heat sealing both regular and irregular shaped packages of Pliofilm of any gauge. Cleveland Lathe and Machine Co. (I-932)

CASE UNLOADER AND UNSCRAMBLER. Specifications and other details are provided on the new A-B-C automatic and fully adjustable case unloader and unscrambler. A-B-C Packaging Machine Corp. (I-933)

SILVERSTITCHERS. Various Silverstitchers are described with their specifications, advantages, features, and illustrations. Also given are the advantages of Silverstitching. Acme Steel Co. (I-934)

PALLETIZED SHIPPING. Collection of 18 sheets which illustrate typical uses of Power Pack expendable pallets and the advantages and economies which result from using them for unit loading and combined packaging of cartons. Addison-Semmes Corp. (I-935)

OFFSET PRESSES. Folder contains a general discussion of the publication presses, form presses, web color presses, and folding machines which are produced by the Webendorfer Division of American Type Founders. (I-936)

HEAVY DUTY WRAPPING MACHINE. The Miller Model MPS wrapping machine, which wraps and seals with heat or glue, is illustrated and described in this bulletin. Features and specifications are included. Ameco Packaging Machinery, Inc. (I-937)

LAGGING ADHESIVE. The outstanding advantages of using lagging adhesive, plasticized synthetic resin emulsion, and operational data are given. Results of laboratory tests are also included. The Arabol Mfg. Co. (I-938)

VINYLITE VINYL BUTYRAL RESINS. Technical release covering the general properties, compatibility, solubility, applications, etc. on Vinylite vinyl butyral resins. Bakelite Div., Union Carbide and Carbon Corp. (I-939)

AUTOMATIC PACKAGING MACHINE. Features, specifications, advantages of equipment that makes, fills, and seals flexible packages for dry and liquid products from rolled materials. Bartelt Engineering Co. (I-940)

ANILINE PRINTING INKS FOR GLASSINE. Two new color guides showing specimens of aniline printing inks for glassine—one printed with Excellopake inks and the other printed with Translustro inks. Bensing Bros. & Deeney. (I-941)

PARAFFIN WAX. Parraflex 270, a paraffin wax formulation developed for superior flexibility without the necessity for using additives, is discussed. Specifications are included. Boler Petroleum Co. (I-942)

ARTIFICIAL FLOWERS FOR USE IN PACKAGING. Sample card of 16 different artificial flowers used for decorative purposes in the packaging field. These samples may be made in all colors, materials and with various kinds of centers by the Cardinal Flower & Novelty Co. (I-943)

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For your information

William Race, president of the Sutherland Paper Co., Kalamazoo, Mich., was elected president of the **Folding Paper Box Assn. of America** at the recent annual meeting of the association in Chicago. Elected to membership on the executive committee, in addition to **Mr. Race,** were **M. G. Fessenden, R. F. Burroughs, William H. Walters, Ira C. Keller, Ralph A. Powers** and **D. T. Neale.** Newly elected national directors are **W. C. Palmer, A. G. Ballenger, P. A. Schilling, W. B. Leavens, Jr., Colin Gardner, Walter Daley, E. S. Dillard, B. M. Richardson** and Messrs. Burroughs and Keller.

The 1951 mid-year meeting of the **Grocery Mfrs. of America, Inc.,** will be held at the Greenbrier, White Sulphur Springs, W. Va., June 21–23. The GMA's 43rd annual meeting will take place Nov. 12–14 at the Waldorf-Astoria, New York.

Exhibit space at the **Super Market Institute's** four-day 14th annual convention opening May 13 has been completely sold out. In addition to the 290 exhibitors, more than 7,500 super-market operators, manufacturers and others in the food industry are expected to attend the meeting. The theme of this year's convention is "how to operate in a defense economy."

B. F. Lacy, vice president of Pollock Paper Corp., Atlanta, has been re-elected chairman of the executive committee of the **Waxed Paper Institute, Inc. J. E. Edelstein,** vice president of Rapinwax Paper Co., Minneapolis, will serve another term as vice chairman. Newly elected to the executive committee is **Donald Ramsay,** Nashua Gummed & Coated Paper Co. Re-elected to the committee were **John H. Snyder,** Marathon Corp., and **D. J. Benjamin,** Waxide Paper Co. Committee members continuing in office are **G. C. Wieman,** Western Waxed Paper Co.; **C. F. Christy,** Kalamazoo Vegetable Parchment Co.; **H. K. Snyder,** Central Waxed Paper Co.; **K. R. Zimmer,** Zimmer Paper Products, Inc.

The Ordnance Packaging Office, Rossford Ordnance Depot, Toledo 1, Ohio, is establishing a complete and up-to-date library of literature pertaining to packaging, to include all service specifications, research information, pamphlets, manuscripts and packaging publications. The Ordnance Packaging Office will welcome the receipt of all printed information on any phase of packaging that will assist in building up the Ordnance library.

Joseph F. Stilling, general chairman of Technical Committees of the Eastern Division of the **Society of Industrial Packaging & Materials Handling Engineers,** has been appointed to head an E. C. A. – Department of Commerce mission on a nation-wide tour. The mission is composed of 24 technicians from France, Belgium, Italy and the Scandinavian countries. Led by Mr. Stilling the group has started a "journey-tour" of American manufacturing plants to study outstanding applications of modern materials-handling methods in a representative cross-section of American industry. The tour, which will last for six weeks, is part of the Technical Assistance Program of the E. C. A. whose emphasis is on increasing and merging the production of the Western World and thereby helping speed European recovery. Mr. Stilling is on leave from the Anaconda Copper Mining Co.

New appointments to the Technical Operations Committee of the **Packaging Institute** are: **Edward R. Hamm** of Sharp & Dohme, chairman of the Packaging Management Committee to succeed **John A. Warren,** who continues as chairman of the Production Division; **Karl E. Peiler** of Hartford-Empire Co., chairman of the Glass Container Committee; **Dr. R. A. Morck** of R. B. Davis Co., Food Committee; **Alvin I. Nelson,** Food Technology Dept., University of Illinois, Food Committee; **Charles M. Woodcock,** General Foods Corp., Food Committee; **C. N. Artsay,** Heyden Chemical Corp., Shipping Container Committee; **Philip I. Heuisler, Jr.,** of Maryland Glass Co., **Walter E. Konschak** of Wheaton Glass Co., **Dr. Frank J. Yourga** of F. & M. Schaefer Brewing Co. and **Orlin E. Johnson** of Bristol-Myers Co., Glass Container Committee. In view of the large number of changes in personnel of the Technical Committees, the present roster of members of committees is being revised and will be available from the Institute in about 60 days.

A 28-page Directory of 51 Contract Packagers has been prepared and is available from the **Packaging Institute,** 342 Madison Ave., New York, at 75 cents a copy. It lists the type of work that the plants can handle, the types of equipment and facilities available, and what materials will be accepted or refused for packaging by each plant. The Institute makes no claim for completeness of the listing, since many contract packagers declined to give out detailed information.

Recently off the press is a book prepared by the Educational Committee of **The Materials Handling Institute, Inc.,** titled "Modern Methods of Materials Handling" (Prentice-Hall, Inc., New York; $5.50), designed to provide broader basic knowledge for men in the materials-handling division of industry and to increase their on-the-job effectiveness. Methods, types of equipment and materials described in the publication are in actual use. The various industries, such as drugs and chemicals, food products, glass, metal products, paper products, etc., are treated separately and there is a separate section on warehousing.

Those producers of displays who are not now members of the **Point-of-Purchase Advertising Institute, Inc.,** will be interested in POPAI's new booklet titled "A Statement of How and Why the Institute Functions." It outlines the purpose of the Institute, the benefits of POPAI membership and the strides made by the Institute in service to members and the entire industry. Copies may be had on request to the Institute, 16 E. 43rd St., New York.

The 16 different product lines manufactured by **Keyes Fibre Co.,** Waterville, Maine, makers of molded pulp and molded plastic products, are illustrated and described in a catalog titled "Keyes Molded Products," recently published by the company. Of special interest to packagers are the sections on

What's doing

May 13-17—**Super Market Institute,** convention, Hotel Stevens, Chicago.

May 15-17—**Toilet Goods Assn.,** 16th annual convention, Waldorf-Astoria, New York.

May 24-25—**The Society of the Plastics Industry,** annual national meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 3-6—**National Paper Box Mfrs. Assn.,** 33rd annual convention and Set-Up Paper Box Exhibit, Hotel Chalfonte-Haddon Hall, Atlantic City, N. J.

June 9-15—**National Assn. of Retail Grocers,** convention and international food exposition, Chicago.

June 17-20—**Institute of Food Technologists,** convention and exhibit, Hotel New Yorker, New York.

June 18-22—**American Society for Testing Materials,** annual meeting, Atlantic City, N. J.

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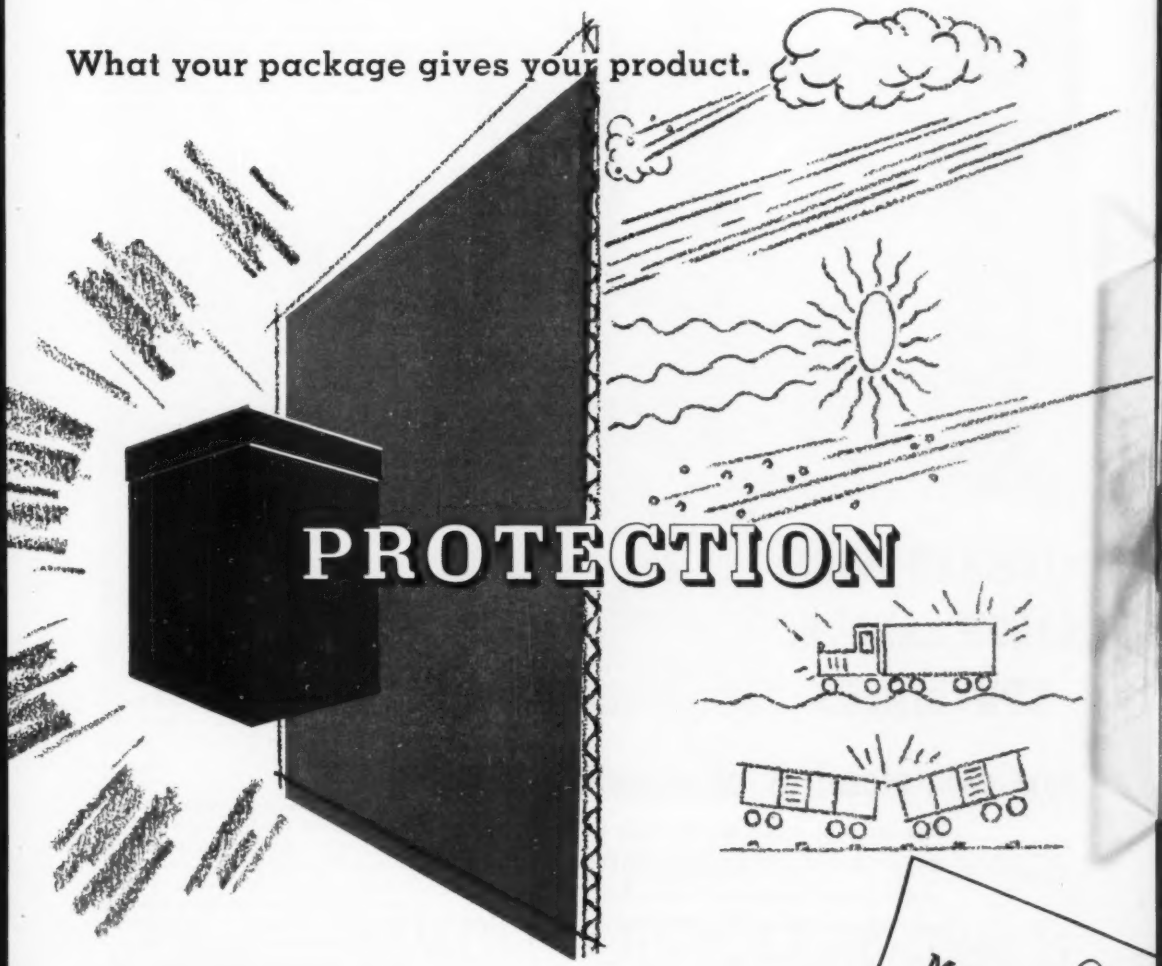

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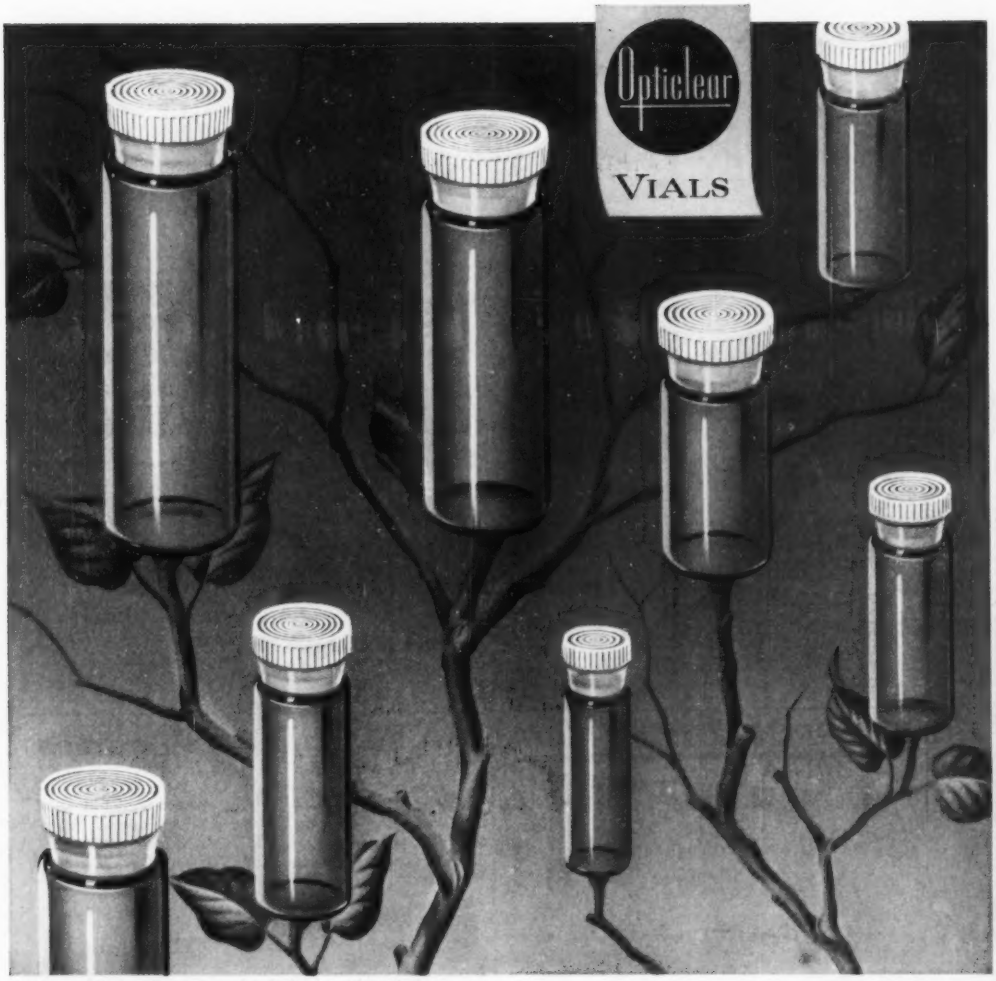
the Savaday Sho-Pak trays for use in pre-packaging fresh meats and vegetables, the Savaday food trays, the Kys-Karton for eggs, the Kys-Pak for packaging apples, the Kys-Pad for head lettuce, the Kys Padflats and trays for shipping eggs. Reprinted sections on items of interest may be had from Keyes Fibre Sales Corp., 420 Lexington Ave., New York.

"Plant Layout Planning and Practice" (John Wiley & Sons, Inc., New York. $7.50) is a practical and helpful book written with the administrative executive and plant engineer in mind and planned also as a handy guide to engineers and as a reference for engineering and business administration students. The authors are **Randolph W. Mallick,** executive staff engineer, Westinghouse Electric Corp., and **Armand T. Gaudreau,** management consultant. The book covers the designing of production and assembly lines, evaluation of capital outlays as well as general plant layouts.

Lt. Col. John Mount has been recalled to active military duty and is assigned by the U. S. Army Air Forces, Pentagon Bldg., Washington, D. C., where he will be in charge of all Air Force packaging. Mr. Mount, Eastern Division president of the **Society of Industrial Packaging & Materials Handling Engineers,** is on leave from the Insurance Co. of North America. **Capt. Paul H. Paulsen** succeeds Colonel Mount as Eastern Division president of the engineering society.

The Sixth Annual Industrial Packaging and Materials Handling Exposition will be held Oct. 1-4, Cleveland Public Auditorium, Cleveland, Ohio. The exposition, which is an event of the **Society of Industrial Packaging and Materials Handling Engineers,** will feature a "Short Course" educational program sponsored this year by the Department of Mechanical Engineering of Case Institute of Technology. **Professor G. L. Tuve** is head of the department and the program is being developed by **Professor William Lynam.** The Society's Annual Protective Packaging and Materials Handling Competition will be repeated this year.

The Chicago Office of MODERN PACKAGING is now located in new quarters at 101 E. Ontario St., Chicago 11. Telephone number is Delaware 7-0060.



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KIMBLE GLASS TOLEDO 1, OHIO
Division of Owens-Illinois Glass Company

Washington review

The big news for packagers will be the continuing orders to implement the recently announced Controlled Materials Plan. CMP will be placed in operation July 1 to assure enough steel, copper and aluminum for defense needs. Producers as well as specified manufacturers of products, excepting consumer durables, must file reports of their critical needs before June 1. Allocation of the three basic metals will be made directly to producers on the basis of detailed requirements for defense and defense-supporting production.

Restrictions on lead

Once regarded as a substitute for other materials in critical supply, lead itself is now on the critical list. A drop of 136,000 tons in the available supply is expected this year. In an amendment to Order M-38, NPA has limited lead consumers to 100% of their rate of use of the metal during the first six months of 1950. Unless there has been some change in the order since this was written, you are now forbidden to use a greater quantity of lead in manufacturing, construction or for maintenance, repair or operating supplies than the average monthly use during the base period. Users requiring less than five short tons a month are exempted and additional quantities may be used to fill a rated order or to meet a scheduled NPA program or to fill an order rated under NPA Regulation No. 2.

Manufacturers of collapsible tubes and users of tubes are severely affected, for the base period contained in the order covers a time when other materials were in better supply. Consequently the use of lead in the manufacture of collapsible tubes during the base period is not representative of today's conditions. Nearly 45% of all tubes were fabricated from aluminum in 1950. During the war years more than 50% were made from lead. Lead, of course, is the last hope of tube users, many of whom have already shifted from tin and aluminum. Relief for those tube users who had no base-period consumption has been requested.

Simplification of glass

The effects of restrictions are beginning to be felt outside their immediate areas. This is a trend that can be expected to develop further as the defense program swells. The far-sighted packager will do well to be on the alert for possible future impact on his operations of restrictions now existing in the over-all program, even though they do not immediately have a direct bearing in his field.

For example, NPA Order M-51 prohibits new designs in machine-made glass containers. The order was placed in effect to conserve capacity of the glass-forming machinery, rather than materials. Need for the order resulted from the heavy demand for glass containers arising from limitations placed on the use of tin in packaging containers. It does not prohibit private molds, but limits their use to existing private molds.

The chain reaction of tin restrictions is but one instance of what is likely to happen in other fields as the effect of materials curtailment spreads to ever-widening areas.

Under Order M-51, a glass container means any machine-made bottle, jar or tumbler made of glass and intended for packaging use. Glass containers of simplified design and others of designs now in existence (actually run on or before March 31) may be manufactured and used for packaging any product, unless subsequently issued schedules compel the use of simplified design. Where conversion to simplified design may be required, sufficient time for the change will be allowed.

From a 1950 output of over 106 million gross containers, the industry is stepping up its manufacturing rate to an estimated 120 million gross for 1951, based on the January level of 10 million gross, according to NPA.

Paper for Government printing

Private printing firms operating under contract with the Government in certain cases have been permitted to order against special reserves established by NPA Order M-36. An amendment to this order increases the percentage to be reserved—book and fine papers from 10 to 15%; special industrial papers from 5 to 15%; crepe wadding for packing reserves from 10 to 25%. The required reserve for printing converting papers is cut from 10 to 5%. Manufacturers must reserve machine time, materials and supplies sufficient to deliver within each calendar month the percentage of their average production of each grade during the most recent calendar quarter.

Phenolic materials may ease

Phenol capacity for the plastic industry is being increased, with some 5,000,000 lbs. new monthly capacity reported coming into production this summer. An increase of 35% in the availability of phenolic molding powders is predicted for late fall. This prospect, while welcome, is of small comfort to present users, who currently find the market tight. Specialty phenolics will probably continue in short supply. DO orders have been running about 15% of total orders and may rise to 30% by the fourth quarter.

Additional benzol will, it appears, be available for the added phenol capacity. The long-range picture for benzol is good. In some quarters, production of 240 million gallons is expected this year, as compared with 190 million gallons in 1950 and 125 million gallons in 1949.

Metal containers

If you are a packer using metal cans and do not have an applicable base period for a particular product, relief is provided in Direction 1 to NPA Order M-25, the order regulating use of metal by the packing industry.

If you pack products having a DO rating and intended for use outside the country by the armed services, you can pack in whatever type of metal container may be specified by the armed services. Provision for this is covered in an amendment to M-25, which seeks to assure additional packaging protection for export shipment of canned foods to the services.

An amendment to M-25 reduces can quotas for certain packs. Beer, pet food and certain non-food products are reduced from a 90 to a 75% quota, according to a schedule in the order.

Insofar as possible, can manufacturers must schedule deliveries in the following order: (1) DO or other orders under NPA directives; (2) cans to pack products designated "A" in the M-25 schedule; (3) cans to pack a "B" list.

A certification of compliance with the regulations in M-25 is required of the purchaser of cans before a supplier can deliver them. Cans made wholly of blackplate are excepted from this provision.

Aluminum quota

The quota of aluminum for the manufacture of permitted products during second-quarter 1951 has been set at 65% of the average quarterly use during the first six months of 1950, according to amended Order M-7. Any user with an inventory of aluminum or parts intended for prohibited uses should consult amended M-7 for exceptions to the prohibiting restrictions.

U. S. patents digest

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps are not accepted. **Edited by H. A. Levey**

Case-Closing and Sealing Apparatus, K. Holstebroe, E. Ardell and S. Kayser (to Hartford-Empire Co., Hartford, Conn.). U. S. 2,542,083, Feb. 20. An apparatus having an intake position, flap-unfolding mechanism, adhesive-applying mechanism, flap-closing mechanism, flap-sealing mechanism, case support and a flight conveyor operable to move the filled case from the intake position.

Lipstick Container, L. E. Isele (to The Eyelet Specialty Co., Waterbury, Conn. U. S. 2,542,033, Feb. 20. In a cosmetic container, an outer tube, a cam-slot tube within the outer tube, a propelling tube within the cam-slot tube and outer tube, a cosmetic cup within propelling tube.

Box-making System, J. S. Stokes (to Stokes & Smith Co., Philadelphia, Pa.). U. S. 2,542,099, Feb. 20. The method of making boxes which comprises locating in predetermined position at an assembly station a duplex wrapper and placing in registration on each half of duplex wrapper a box blank, then covering the box blank with its own half of duplex wrap.

Method and Apparatus for Making Laminated Packaging Blanks, J. A. Zinn, Jr., Chicago, Ill. U. S. 2,542,298, Feb. 20. In apparatus for forming sheet backing material and sheet lining material into a laminated packaging blank having certain portions which are adapted to be facingly engaged and adhered together in forming the blank into a package.

Container Folding Machine, L. Veyret and G. Geffroy (to La Cellophane, Paris, France). U. S. 2,542,379, Feb. 20. An apparatus for forming folded open-top cartons which are tight to a predetermined level from flat rectangular blanks, comprising a perforated table to receive said blank, suction compartments conforming in shape to the succesive parts of the blank to be folded and communicating with said perforations.

Carton, J. Gariepy, Everett, Mass. U. S. 2,542,504, Feb. 20. A carton formed from a single piece of formed sheet stock in which one end panel of sheet is cut away to form locking tabs, opposite end having a panel comprising a gluing strip.

Apparatus for Plicating Tubing. G. Freund (to The Visking Corp., Chicago, Ill.). U. S. 2,542,652, Feb. 20. An apparatus for producing continuous lengths of plicated tubing which comprises a first pair of squeeze rolls, a second pair of squeeze rolls disposed in spaced relationship to first pair, both pairs of squeeze rolls being adapted to seal off a gaseous medium introduced in a section of tubing extending from the first set of squeeze rolls to the second.

Vent-Type Bottle Closure, A. W. Weidner (to Armstrong Cork Co., Lancaster, Pa.). U. S. 2,542,741, Feb. 20. A venting-type bottle closure comprising a closure shell and a sealing liner disposed within the shell, said shell including a top and a depending skirt for engagement with a receptacle to be sealed, liner including a facing for sealing engagement with lip of receptable to be sealed.

Wire Container, J. C. Shumway, Kansas City, Mo. U. S. 2,542,882, Feb. 20. In a device for holding and dispensing a coil of wire, a container having side and top walls, top wall having an opening therein.

Composite Package, C. C. Adams (to Davis & Geck, Inc., Brooklyn, N. Y.). U. S. 2,542,957, Feb. 20. A package comprising an outer, sealed, transparent flexible envelope containing a sterilizing liquid and an inner sealed, transparent flexible envelope, inner envelope containing a sterilizing liquid and a sealed container, container having therein a suture.

Machine for Cutting Short Lengths of Tape from a Strip and Applying the Same to Articles, P. J. Dewyer, Libertyville, Ill. U. S. 2,543,004, Feb. 27. A rotatable holder for advancing a free end of a length of adhesive-coated tape without contacting the adhesive-coated side, comprising a multisided rotatable body having a hollow hub and a plurality of lateral tape-supporting sides regularly arranged therearound, each of said tape-supporting sides of body being parallel to the axis of rotation of body and the corner edges formed by the intersection of sides providing tape-cutting edges.

Sealed Container with Hinged Cover, M. I. Williamson and H. A. Carruth (to National Folding Box Co., Inc., a corporation of Connecticut). U. S. 2,543,084, Feb. 27. An improved hinged-cover container comprising a box part having a plurality of enclosing side panels forming a tubular body, a bottom wall panel closing the bottom end thereof, a plurality of inturned flaps respectively hinged to the upper ends of certain enclosing side panels of the box part and providing a plural-ply top wall.

Conveyor, F. W. Wehmiller, W. J. Nekola and P. H. Spelbring (to Barry-Wehmiller Machinery Co., St. Louis, Mo.). U. S. 2,543,142, Feb. 27. In a machine for simultaneously advancing upright articles along a substantially horizontal path and rotating said articles each about its vertical axis as they are advanced, the combination of a pair of parallel substantially horizontal frictional track members spaced apart to support articles upright.

Sealing Sheet Applying Apparatus, E. Ardell (to Hartford-Empire Co., Portland, Conn.). U. S. 2,543,220, Feb. 27. In combination, a substantially horizontal conveyer for conveying a succession of containers, a rotary head rotatable about a substantially horizontal axis disposed above conveyer, said head having a plurality of sheet-supporting devices traveling in a generally circular path to engage the successive containers on conveyer.

Foldable Carton, O. A. Berman, New York, N. Y. U. S. 2,543,275, Feb. 27. A carton formed from a single piece of material comprising an elongated top wall, a first and second side wall hingedly connected at one of their side edges to the opposing longitudinal marginal edges of top wall and disposed in transverse alignment therewith.

Apparatus for Handling Containers, A. C. Everett (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,543,280, Feb. 27. The combination with a plurality of mechanisms for performing successive operations on a container and constituting one group, means positively driving said mechanisms of one group in accurately timed relation to one another, a plurality of different mechanisms for successively performing different operations.

Applying Flag-Type Labels to Electric Cords or Other Cylindrical Articles, A. K. Marsh (to A. Kimball Co., New York, N. Y.). U. S. 2,543,323, Feb. 27. A flag-label attaching machine including apparatus for feeding a label into position adjacent an attaching station, apparatus that supplies successive cords into a position adjacent the label apparatus for wrapping the label around the cord with the flag ends of the label in confronting relation.

Pull-Tape Dispensing Device, F. A. Voos, Newark, N. J. U. S. 2,543,681, Feb. 27. A container, a foundation member consisting of a strip of pliable material folded back and forth in zig-zag fashion, said strip after being compressed and inserted in container forming a series of open-ended pockets, an operated member consisting of a strip of pliable material so folded over each upper edge of folded foundation member that a series of loops is formed in series of pockets, a plurality of flat objects to be dispensed, one of objects being disposed in each of loops, and means to eject objects successively.

Handle for Bottle Carriers, S. N. Lebold (to Morris Paper Mills, Chicago, Ill.). U. S. 2,543,698, Feb. 27. A suspending handle for a bottle carrier adapted to be supportingly engaged with a carrier through an opening in the latter, comprising a one-piece elongated and flexible fibrous sling.

Sealed Carton and Method, F. D. Bergstein, Cincinnati, Ohio. U. S. 2,543,757, Mar. 6. In a sealed package, a collapsible paperboard container, having a tubular body and end-closure means, said container being in erected condition with said end-closure flaps closed, interior seals for the ends of carton comprising hardened castings of predetermined amounts of sealing substance entirely covering the folded flaps.

Container Closure, H. Z. Gora (to The Gora-Lee Corp., Stratford, Conn.). U. S. 2,543,774, Mar. 6. A sheet-metal cap of the crown type having a sealing gasket carrying shell, comprising a top plate and a depending skirt having a wall portion and a connecting outwardly flared bottom portion terminating in a free edge of single thickness.

Container Closure, H. Z. Gora (to Gora-Lee Corp., Stratford, Conn.). U. S. 2,543,-

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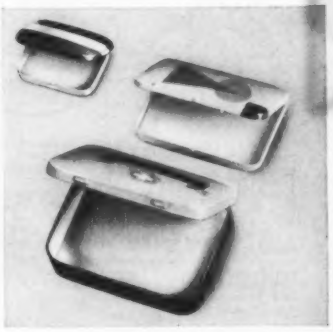

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775, Mar. 6. A cap for a container having a mouth formed with a transversely curved lip therearound, having an end surface with an annular inner edge, said cap comprising a top plate and a skirt depending therefrom to fit over the mouth of the container and grip a retaining ledge on the exterior of the container adjacent the mouth with a sealing member on the under surface of the plate and positioned to be interposed between the plate and the lip of the container to seal the mouth.

Article Carrier, E. L. Arneson (to Morris Paper Mills, Chicago, Ill.). U. S. 2,543,821, Mar. 6. A blank for a flexible paperboard carrier comprising a pair of similar sections integrally articulated to one another in end-to-end relation, said sections each including end- and side-wall panel members integrally hinged in end-to-end relation to one another.

Fungicidally Treated Multiwall Bag, F. R. Linda (to St. Regis Paper Co., New York, N. Y.). U. S. 2,543,858, Mar. 6. A multiwall bag comprising a plurality of paper tubes, disposed one within another, tubes being formed with overlapping edges glued together longitudinally, one of said tubes being treated with a fungicidal agent.

Package Handling and Treating Machine, H. A. Heyward (to Pin Money Exchange, Inc., Chicago, Ill.). U. S. 2,543,968, Mar. 6 In a machine for facilitating and expediting the performance of an operation on individual packages which are contained in an upper and lower tier within a carton and are to be returned to carton after performance of operation, means for supporting such carton in a predetermined position.

Method and Machine for Making and Filling Fluted Containers, R. W. Hoag, Melrose, Mass. U. S. 2,544,020, Mar. 6. The method of making filled, fluted containers by a sequence of operations, consisting in advancing a web of single-faced, transversely corrugated flute-formed material having the ends of the corrugations along the side margins of the web closed tight and cutting the crown of each corrugation at each end near the margin of the web.

Box, J. H. Oxley, Watertown, Mass. U. S. 2,544,101, Mar. 6. A box comprising an outer element made from thin, flat, transparent, synthetic thermoplastic sheet material and comprising a one-ply bottom wall panel bordered throughout its perimeter by relatively perpendicular two-ply side walls and means coupling together the ends of side walls at each corner of the box and having an inner ornate opaque lining element of paper closely fitted within and throughout the interior of outer element which is exposed to view.

Apparatus for Measuring, Weighing and Loading Loose Materials into Containers, H. J. Zenke and E. E. Arnold (to St. Regis Paper Co., New York, N. Y.). U. S. 2,544,210, Mar. 6. A valve-bag filling apparatus having in combination a weighing device, a spout mounted on the

U. S. patents digest

weighing device, means upon the weighing device for holding the bag in filling relation to said spout.

Re-Usable Container, S. W. Snyder (to Container Corp. of America, Chicago, Ill.). U. S. 2,544,283, Mar. 6. A reusable rectangular fibreboard container comprising in combination, single-layer side and bottom walls foldably interconnected at their ends by extensions thereof providing triple-layer end walls, locking flaps folded downwardly from upper edges and biased away from their outer surfaces.

Wrapping Machine, E. D. Boyce (to Curtiss-Wright Corp., a corporation of Delaware). U. S. 2,544,442, Mar. 6. In a winding machine having a rotated ring through which a substantially coaxial core or the like may move in an axial direction, and having a reel on the ring carrying a tape or strand for wrapping, helically, on the core as the ring rotates, a guide bushing on and concentric with the ring through which the core passes.

Method of Making Paper Containers Greaseproof, R. H. McKee, New York, N. Y. U. S. 2,544,509, Mar. 6. In a method of greaseproofing containers to be used for the transport of liquid hydrocarbons, such as gasoline, oils, lubricants and consisting of a single-layer porous paper having a pH of less than 6, the steps of applying to the inside wall of the containers a coating of an aqueous solution of low-viscosity glue and of a quantity hexamethylene tetramine equal to about 0.2 to 0.5% of the dry weight of the glue thereupon directly filling the container with the liquid hydrocarbons of a sufficiently low temperature to thereby congeal the coating.

Collapsible Carton, L. H. Phillips (to O. B. Andrews Co., Chattanooga, Tenn.). U. S. 2,544,565, Mar. 6. A paperboard carton including a tray and a cover of substantially the same depth hinged along the rear edges thereof, the tray comprising a bottom panel with a front wall, rear wall and end walls substantially perpendicular thereto extending from the edges thereof.

Closure-Applying Machine, W. E. Zimmerman (to Standard Cap & Seal Corp., Chicago, Ill.). U. S. 2,544,626, Mar. 6. Mechanism for affixing closures on receptacles including a support, a vertical shaft arranged for relative movement with respect to the support, a flange-shaped member mounted upon the lower end of shaft and formed with a plurality of concave portions to provide a plurality of fulcrum seats.

Labeling Machine, C. H. Amidon and I. E. Peterson (to Norton Co., Worcester, Mass.). U. S. 2,544,627, Mar. 6. In a labeling machine having means to apply labels having spaced gummed portions into a predetermined position on an article to be labeled, a gumming apparatus including an adhesive reservoir with a rotatable cylinder therein.

Pressure-Sensitive Adhesive Tape, J. H. Kugler and W. E. Lundquist (to Min-

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U. S. patents digest

nesota Mining & Mfg. Co., St. Paul, Minn.). U. S. 2,544,692, Mar. 13. Permanently tacky and pressure-sensitive adhesive tape including backing and a pressure-sensitive adhesive coating on at least one surface thereof, said coating comprising a copolymer of 100 parts of isobutyl acrylate and 5 to 10 parts of 2-ethyl butyl fumarate.

Automatic Filler, T. A. St. Clair (to Phillips Petroleum Co., a corporation of Delaware). U. S. 2,544,734, Mar. 13. Apparatus for filling containers with a predetermined weight of fluid, comprising in combination container-weighing means, a fluid-dispensing line for filling containers and means for positioning one of containers so that it is weighed by the container-weighing means and is aligned for connection to fluid-dispensing line.

Magnetic Stacking and Packaging Machine for Cans, J. C. Strickler (to American Can Co., New York, N. Y.). U. S. 2,544,735, Mar. 13. In a machine for packaging metallic containers, the combination of a support for the containers, means for holding a package to receive said containers, magnetic means movable relative to the support for moving containers from support into position adjacent the package-holding means and magnetic means for holding containers in their displaced position.

System for Filling Containers by Weight, T. A. St. Clair (to Phillips Petroleum Co., a corporation of Delaware). U. S. 2,545,-118, Mar. 13. A container-filling system for filling a container having an inlet with a measured weight of volatile liquid comprising in combination a scale adapted to support and weigh said container.

Package Encased in Plastic Sheet Material and Method of Making the Same, H. Rumsey, Jr., Rochester, N. Y. U. S. 2,545,243, Mar. 13. A package comprising package contents and a wrapping in the form of a relatively thin sheet of thermoplastic material secured thereabout with edges of the thermoplastic material in overlapping relationship, said overlapping portions having a plurality of proximity positioned apertures extending through both layers of the material in registry with each other and providing communication between the atmosphere and the inside of the package.

Wrapping Machine, J. A. Gilbert (to Rose Bros., Ltd., Gainsborough, England). U. S. 2,545,273, Mar. 13. A wrapping machine comprising a movable pocket member formed with a series of pockets, each of which is provided with a wrapping, means for feeding articles to successive pockets.

Labeling Machine, J. Magnusson (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,545,292, Mar. 13. In a labeling machine, in combination, a conveyer for supporting and conveying the containers to be labeled, labeling mechanism including a magazine for supporting a stack of labels, movable suction pad adapted to engage and withdraw the lowermost label in the stack.

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The gift market

(This article continued from page 85)

decorative details such as ribbons, cords, tassels, tapes, etc. Firms which make these gift-packaging aids have been most active in developing suitable stock lines for all occasions and in developing prefabricated items which can be added to a package with a minimum of labor—an important matter for consideration in this day of high costs.

Tasseled cords, for instance, can be ordered in any suitable length and properly looped so that they may be applied by simply slipping them over a bottle neck and securing them with a slip knot. Many liquor firms adopt this method to dress up packages for the Christmas trade.

Retailer packaging

Store gift wraps will undoubtedly be simpler this year due to increased costs and shortages. Ordinarily it is the practice of the better type of store to use a privately designed loose wrap, whereas stores catering to large volume use a tight-wrap box of private design, which requires only a string or rubber band to complete the package.

It is significant, therefore, that a store like Lord & Taylor in New York last year eliminated loose gift-wrapping paper. Undoubtedly the brilliant aluminum foil and gold box tied with gold cord that Lord & Taylor used last Christmas was a time and labor saver—yet it was one of the most elegant gift packages on Fifth Avenue. Another detail that took the Lord & Taylor package out of the ordinary was the specially designed tissue used for the inner wrapping, printed with irregular gold dots.

To dress up the billions of dollars worth of merchandise Americans buy each year as gifts, packaging is a tremendous force in the national economy.

When rightly used, it can attract shoppers to *your* product, *your* brand —ignored or badly done, it can cause millions to pass you by in favor of some competitive product. Never underestimate the power of a frill!

CREDITS: ***Marlboro Shirt Co. Chim-e-ney package***—*Box wrap, L. Gordon & Son, Inc., Baltimore, Md.* ***Richelieu***—*Design, Berte Samuel, New York; box, Shoup-Owens, Inc., Hoboken, N. J.; box coverings, Facile Corp., New York; silk screening, Ambassador Arts, New York.* ***A & P Candy***—*Design, Robert G. Neubauer, Bridgeport, Conn.; box, J. J. Dix Co., Inc., New York, and Shampain, Citron, Clark, Inc., Brooklyn, N. Y.; wrap, R. R. Heywood Co., Inc., New York.* ***Modeltex Stockings, Fabulous 100 package***—*Box, John Crompton Adelphia Corp., Philadelphia, Pa.* ***Mavis Snow Queen Cologne***—*Tassels, Rosenthal Bros., New York; labels, Colonial Label Co., New York; bottles, Hazel-Atlas Glass Co., Wheeling, W. Va.* ***PM de Luxe and Mt. Vernon***—*Cellophane wrappers, Milprint, Inc., Milwaukee, Wis.* ***Glenmore's Old Thompson***—*Carton, Milprint, Inc.* ***Lord Calvert***—*Cartons, The Chaspec Mfg. Co., Greenwich, Conn.* ***Martin's V.V.O.***—*Cartons, Robert Gair Co., Inc., New York.* ***Paul Jones***—*Design, W. Terrell Dickey, Louisville, Ky.; cartons, The Lord Baltimore Press, Baltimore, Md., using Fidel-I-Tone process.* ***Fleischmann***—*Design, Robert G. Neubauer; cartons, Swayze Folding Box Co., Canton, Pa.* ***Bonded Beam***—*Cartons, United Board & Carton Corp., Syracuse, N. Y.* ***Early Times***—*Cartons, Bradley & Gilbert Co., Louisville, Ky.* ***Corby***—*Cartons, American Coating Mills, Div. of Owens-Illinois Glass Co., Chicago.* ***Olde Chanticleer cheese***—*Design, Burton Beebe of Karl Brocken, Milwaukee, Wis.; printed corrugated boxes, Downing Box Co., Milwaukee, Wis.* ***H. J. Heinz Co.***—*Corrugated boxes, F. J. Kress Box Co., Pittsburgh, Pa.* ***Jefferson Clock***—*Corrugated boxes, Stone Container Corp., Chicago.* ***Gourielli Moonlight Mist Eau de Parfum***—*Bottles, Carr-Lowrey Glass Co., Baltimore, Md.; bottle printing, Ceragraphic, Inc., Newark, N. J.; cartons, Brooks & Porter, Inc., New York; closures, Victor Industries Corp., Brooklyn, N. Y.; blue cording, The Textile Craft Co., New York; satin ribbons, Amster Novelty Co., Inc., Brooklyn, N. Y.* ***Prince Matchabelli Matchmates***—*Acetate sleeve, Fred Mann & Co., Inc., New York; silk screening of acetate sleeve, Ambassador Arts; cartons, The Warner Bros. Co., Bridgeport, Conn.; closures, Brass Goods Mfg. Co., Deep River, Conn.; bottles and vials, Kimble Glass Div. of Owens-Illinois Glass Co., Toledo, Ohio; silk screening of vials, T. C. Wheaton Co., New York.* ***Almond Roca***—*Cartons, Schmidt Lithograph Co., San Francisco, Calif.* ***Daggett & Ramsdell's Peter Cottontail Easter Soap***—*Cartons, Brooks & Porter, Inc.* ***Nosco Plastics***—*Cartons, Container Corp. of America, Chicago, and Liberty Cartons, Inc., Steubenville, Ohio.* ***Daniel Hays Co. Merry Hull gloves***—*Design, Emily T. Oppa, New York; folders, Supreme Displays, Inc., New York.* ***Polystyrene Apple***—*Rogers Plastic Corp., West Warren, Mass.* ***Easter Rabbit***—*Metal container, I. D. Co., Inc., New York.* ***Swing-A-Way Mfg. Co.***—*Plastic boxes made by Koller-Craft Plastic Products, Fenton, Mo., using Du Pont Lucite.*

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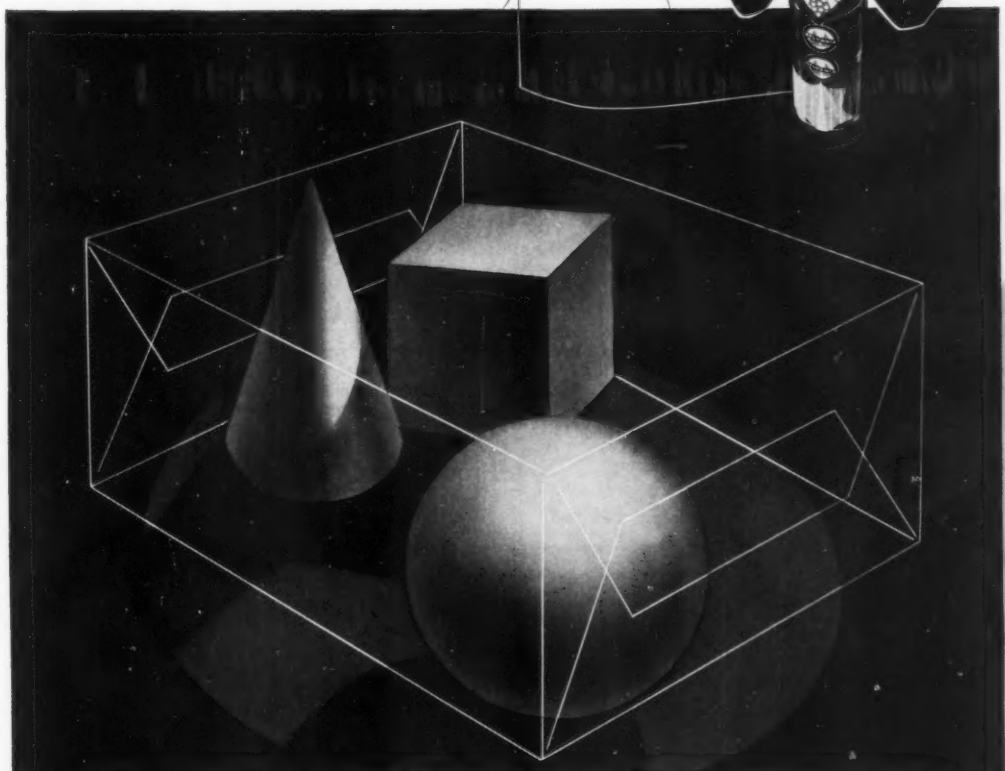

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Your Sylvania representative will help you choose the cellophane that exactly fits your requirements. Talk over your problems with him or write us mentioning the specific application in which you are interested. Address: Market Development, Dept. MP-5.

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SYLVANIA DIVISION AMERICAN VISCOSE CORPORATION

Manufacturers of cellophane and other cellulose products since 1929

General Sales Office: 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

Gillette

(*This article continued from page 99*) of the Super Speed razor and a dispenser with 10 Blue Blades), "You'll get the quickest, easiest shaves of your life."

How did the bet pay off? Two million men took up the offer and only 487 asked for the $2.

Many of the Gillette Co.'s customers took the bet *too* literally and sent an additional dollar to the company.

The results of this daring promotion well illustrate the classic elements of Gillette's success: a good product and expert showmanship—all tied in to a famous package that provides the vital spark of recognition that makes for greater sales at the point of purchase.

Credits (current packages): ***Razor blades**—Inner wrappers, Nashua Gummed & Coated Paper Co., Nashua, N. H. Outer wrappers (Blue Blades), Sale Lithograph Co., Buffalo, N. Y., and (Thin Blades), The Nevins-Church Press, Glen Ridge, N. J. Cartons, The Nevins-Church Press and The U. S. Printing & Lithograph Co., Cincinnati, Ohio. Display packers, The Nevins-Church Press. Plastic dispensers, Foster-Grant Co., Inc., Leominster, Mass., with metal subassemblies by J. L. Clark Mfg. Co., Rockford, Ill. Cellophane overwrap (wholesale put-up), Shellmar Products Corp., Mt. Vernon, Ohio. Blade-wrapping machine, Package Machinery Co., Springfield, Mass. Cartoning machine, R. A. Jones & Co., Inc., Cincinnati, Ohio. Wrapping and heat-sealing machine, Scandia Mfg. Co., North Arlington, N. J., and Package Machinery Co. Carton-forming machine, Package Machinery Co. Tape-sealing conveyor unit, Minnesota Mining & Mfg. Co., St. Paul, Minn. **Razors**—Cases (Executive), Zell Products Corp., Norwalk, Conn.; (Aristocrat and Milord), Farrington Mfg. Co., Boston, Mass.; (Super Speed), Foster-Grant Co., Inc.; (Tech), Imperial Paper Box Corp., Brooklyn, N. Y. **Shaving Cream**—Tubes, Victor Industries Corp., Brooklyn, N. Y.; Aluminum Co. of America, Pittsburgh, Pa.; National Collapsible Tube Co., Providence, R. I. Closures, Victor Industries Corp. Cartons, The Nevins-Church Press. Tube-filling machines, F. J. Stokes Machine Co., Philadelphia, Pa., and Arthur Colton Co., Div. Snyder Tool & Engineering Co., Detroit, Mich. Cartoning machine, R. A. Jones & Co. **Displays**—Super Speed display-merchandiser rack, Parker Mfg. Co., Worcester, Mass. Display cards (for advertising), Snyder & Black, Inc., New York, and Einson-Freeman Co., Inc., Long Island City, N. Y.; (for merchandising), The Nevins-Church Press.*

Flavor factors in frozen-food wraps

(*This article continued from page 137*)
0.0014 in. as a result of the shrinking process.

The use of laminated sheets appears to provide a better opportunity for the manufacturer to control permeability to oxygen and water vapor than seems possible with present types of coated sheets. However, the prospect of developing more effective coating materials shows promise and must not be overlooked.

Summary

A comprehensive study of the effect of different types of packaging materials on desiccation and flavor of ground beef stored at -5 to -8 deg. F. was made during 1947-50. It was found that desiccation, as measured visually and by loss of weight, was not a reliable criterion for evaluating the protective value of a packaging material with respect to flavor retention.

The relative rate of permeability of five sheet materials to oxygen at 0 deg. F. was determined. Aluminum foil (0.0015 in.) and cellophane (300 MSAT-87), which showed low relative permeability, were among the materials used which provided the best protection from flavor deterioration during storage. The other three materials, which were much more permeable to oxygen, were among those which provided less-satisfactory protection from flavor deterioration These three materials were coated sheets, the coatings consisting of polyethylene, wax, and wax and polyethylene, respectively.

The data from 31 replicated tests indicated that the most effective types of packaging materials were aluminum foil, laminated sheets and certain transparent films. Coated and impregnated papers were found to provide ineffective protection in comparison with other types used for storage periods of six to 11 months.

Acknowledgements

The authors wish to acknowledge the assistance of M. P. Steinberg and Donald F. Miller in the study of oxygen permeability; the cooperation of P. A. Anderson and W. J. Aunan of the Division of Animal Husbandry in supplying meat and in participating in the judging during 1947-48; the assistance of Lillian W. Anderson and Shirley Trantanella in processing and judging procedures and in the assembling of date. During 1946-49, some of the funds for these studies were made available by the Graduate School of the University of Minnesota.

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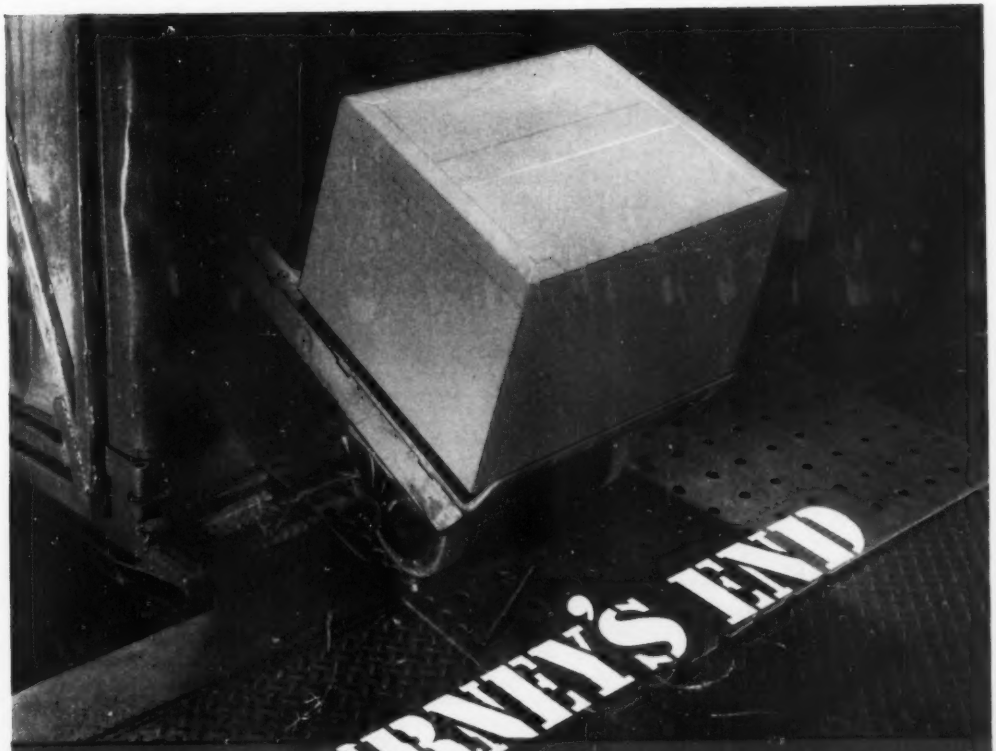
Standard nail kegs

A proposed Simplified Practice Recommendation covering a standard height for wooden nail-kegs has been submitted to the producers, distributors, users and others interested for acceptance or comment, according to the Commodity Standards Division, Office of Industry and Commerce, U. S. Dept. of Commerce.

A standard height of 17 in. is recommended by the Committee on Packing and Loading of the American Iron & Steel Institute, with the approval of the Associate Cooperage Industries of America, Inc.

Copies of the recommendation may be obtained from the Commodity Standards Division, Office of Industry and Commerce, U. S. Dept. of Commerce, Washington 25, D.C.

CORRECTION—In Table VII of the article "Polyamide Resin Suspensoids" by Harold Wittcoff, p. 115, March issue, the author listed the American Cyanamid Co. as the supplier of Paraplexes G-40, G-50, RG-8 and RD-2. These plasticizers are, of course, manufactured by the Rohm & Haas Co., Philadelphia.



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Gaylord Boxes

It has been a long, rugged trip with plenty of rough handling, but there it is — fresh as a daisy — just as it left the factory.

Gaylord Boxes are especially designed and manufactured to provide maximum protection for the product — and they do just that *all the way!*

GAYLORD CONTAINER CORPORATION

General Offices: ST. LOUIS

Produce pre-packagers assured supplies

With suppliers assuring an allocation to the produce pre-packaging industry of a "fair share" of packaging film and other needed materials, an air of optimism prevailed at the first conference and exposition of the Produce Prepackaging Assn., held recently in Columbus, Ohio. More than 300 persons attended and 23 suppliers exhibited their products. Also reported was an advance in the selling of pre-packaged produce, indicating an increasing acceptance of and a greater demand for consumer-sized units.

The severest shortage of material used in the industry is in polyethylene. Cellophane also is short, but one large producer has promised an increase in output and a new producer has entered the field. The Pliofilm supply was reported as "good" and additional tonnage of cellulose acetate has been promised the industry. Last year the produce pre-packaging industry consumed 12,000,000 lbs. of flexible film, 50,000,000 lbs. of paperboard, 201,000,000 mesh bags and 17,000,000 paper-mesh window bags.

Pre-bagging Washington State apples

(This article continued from page 113)
findings are given in Table VII.

While gathering data on the cost of retailing, it was also found that the consumer spent on an average of 0.59 minutes making an average purchase of 2.2 lbs. of apples from a bulk display. Those who bought either a 3- or a 4-lb. bag used only 0.24 of a minute. This saving of a housewife's time is, of course, a dominant reason for the growing preference for pre-bagged merchandising. It also indicates that retailers have a possibility of getting more customers through stores in peak hours.

Pre-packaging of apples at shipping point is growing slowly, but there is definite indication that its growth will continue, especially as the packing houses are gradually developing better equipment for the work. With labor becoming scarcer and more expensive, there may be added inducement to retailers to switch to pre-packaged merchandising, so that, unless packaging materials become acutely short, there is reason to believe that shipping-point pre-packaging of apples is not only a step toward more efficient marketing, but one in the direction of conservation of labor and of food supply.

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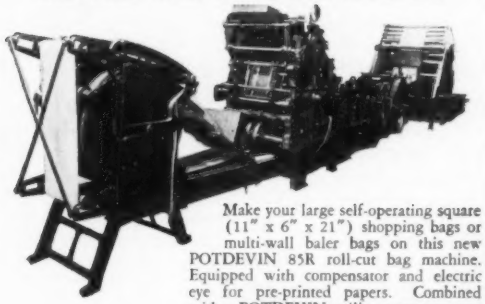

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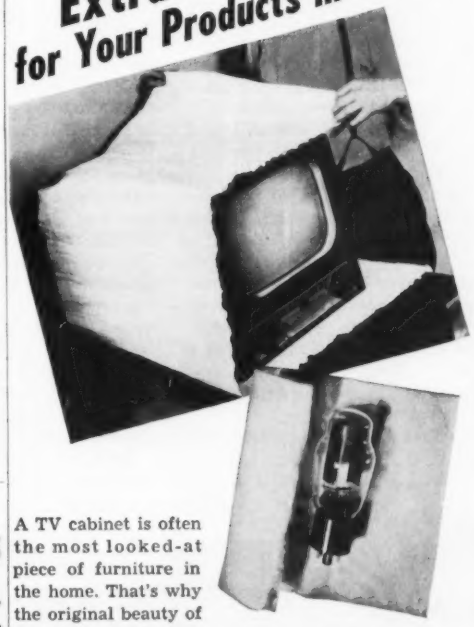

A TV cabinet is often the most looked-at piece of furniture in the home. That's why the original beauty of so many sets is protected from damage in transit by Pad-Pak.

Here is the ideal protective packing. Made of cotton wadding, Pad-Pak has resilience to absorb impact . . . to protect against scratches and rub marks. Glazed outer surface gives extra body, greater ease in handling, and permits accurate cutting to any shape.

But safeguarding cabinets in shipment is only the beginning of a long list of Pad-Pak uses. Any item subject to breakage or marring—from perfume bottles to polished metal parts — reaches its destination undamaged when cushioned with this extra soft, resilient material.

Ask for samples of Pad-Pak, stating your choice of thickness — from ⅛ to ½ inch. Write Dept. M5.

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Recommendations of the Committee on Cargo Packaging

In its recent final report, the Committee on Cargo Packaging stated as its conclusions that minimization of faulty and/or inadequate overseas packaging is a problem which best can be realistically dealt with through close cooperation between carriers and cargo interests. This cooperation should take the form of an educational program designed to have carriers acquaint cargo interests and commodity associations with packaging faults as determined after receipt of cargo on the carriers' piers, with an urging that corrective measures be exercised.

Solution of the problems does not lie in the promulgation of minimum requirements for packaging, according to the report, nor the creation of a bureau designed to supervise or control packaging. Nor did the committee consider it advisable that there be intervention on the part of Government in the form of the issuance of a code.

Specific recommendations made by the committee were:

(1) That the Maritime Assn. of the Port of New York appoint and maintain a permanent Packaging Committee with revolving membership, the personnel to include at least one outstanding packaging engineer and two representatives each of the cargo interests, the carriers and the underwriters.

(2) That the Maritime Assn. of the Port of New York, in conjunction with the establishment of the above-mentioned Packaging Committee, should undertake to (a) secure the agreement of the carriers in this port individually to undertake a claims-prevention program, (b) encourage the carriers to undertake educational programs for their pier and seagoing staffs in the handling and stowage of cargo and the development of progressive improved methods in the light of changing conditions, (c) encourage underwriters to continue their efforts toward improvements in packaging, (d) encourage shippers to promote packing improvement through their trade organizations, (e) endeavor to obtain the support of cargo interests in a frank exchange of information with the carriers and underwriters to the end that the cargo interests be educated as to their share of responsibility in insuring adequate packaging of their cargo to meet normal shipping conditions and (f) secure the continued support of the underwriters by encouraging a free exchange of information with importers, exporters and carriers regarding claims records on specific types of cargo.

The committee felt that such a voluntary method be given a real trial but that if, after the lapse of a reasonable time, it is found that the desired results cannot be obtained in that way, then the suggested permanent committee should undertake the study of any other methods which might more effectively deal with this problem.

The Committee on Cargo Packaging, which has been conducting its investigations for over a year, was appointed by the president of the Maritime Assn. of the Port of New York at the request of carriers, packagers, insurance interests and other groups.

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FOR SALE: One Model S Automatic Labeling Machine, equipped with photo electric cell. Can be adjusted for various sizes or lengths. First class condition. May be thoroughly inspected. Reply Box 175, Modern Packaging.

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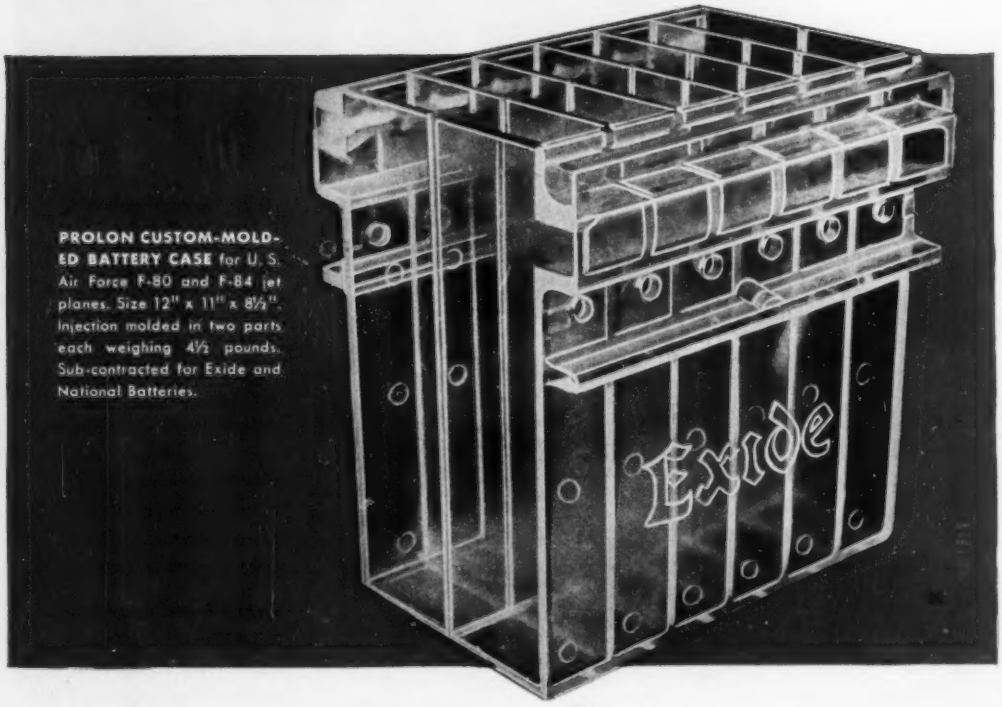

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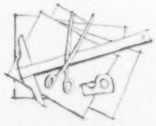

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